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THE REDUCTION OF SURGICAL MORTALITY.*

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Surgery of the present day has slowly evolved from the painstaking studies of many generations of surgeons. Practically everything that was known concerning the art prior to the introduction of anesthesia and asepsis, however, is now obsolete, and surgery as practiced today may be regarded as an art which has developed since that time. As far back as 3,000 years ago are records of surgery of a crude nature, but its practice at that time was devoted largely toward efforts to heal wounds. Hippocrates, who lived four centuries before the birth of Christ, must have been a wonderful surgeon in his day, and his teachings and writings have been handed down from generation to generation to the present time. For about 500 years following his death, surgical science made little progress.

At this time Galen, through his dissections and studies in physiology, became a noted surgeon, and his teachings were broadly scattered. He discovered the true function of arteries and learned that blood instead of air flowed through blood vessels. His teachings were followed for over 1,300 years, and little of note was added during this time.

There existed through this period physicians, surgeons and barber surgeons. The physicians were the great men of the profession, while the barber surgeons occupied the lowest position. The surgeons who were better educated than the barber surgeons occupied an intermediate position between the two. There was much discussion between these groups, and it required centuries for the more intellectual and better educated surgeons to separate themselves from the barbers, and to establish surgery on a broader and more scientific basis.

The teachings of Galen were followed until the sixteenth century, when Versalius and Paré, through their studies in anatomy and physiology, did much to put surgery on a firmer basis. Paré brought out a method of controlling hemorrhage in amputations by means of ligatures. From then to the nineteenth century studies in anatomy, histology, chemistry, physiology, pathology, and embryology were carried on and the uses of the microscope, in a limited way, were made known.

On account of the great horror which patients had of operations, because of the pain experienced and the great danger of infections, only such surgery as was absolutely necessary was advised. Many people died from infections from even simple operations. About the middle of the nineteenth century, ether anesthesia was introduced almost simultaneously by Long and Morton, and operations which previously had been rare became much more common. In the Massachusetts General Hospital, for instance, where an average of three operations had been done each month for the five years previous to the introduction of anesthesia, the number of operations increased so rapidly that during the five years immediately following the introduction of anesthesia nearly three times as many operations were performed, and in the same hospital, fifty years later, one hundred times as many operations were performed annually as before anesthesia was introduced.

About twenty years after the introduction of anesthesia, Lister advanced ideas regarding bacteria as a cause of infection. His ideas were based partly on Pasteur's experiments, showing that putrefaction was due to the action of micro-organisms. An entirely new era in surgery began. Although Lister's work was scorned and laughed at by many for a number of years,

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it was gradually accepted, and through his suggestions it became possible to perform operations which hitherto had been impossible. Aseptic surgery followed Lister's antiseptic surgery.

The surgeons of the generation which followed Lister, and the one which has just preceded our own, through the introduction of anesthesia and aseptic surgery, had opened to them great possibilities which they seized and made good use of, and they may be looked on as the surgeons largely responsible for the development of our present day technic. Not only did they develop aseptic technic and the technic of many of the operative procedures which are used today, but through their studies of pathology in living tissues they were able to make deductions of great value in treating surgical diseases. Prior to their time, much concerning pathology had been learned from the examination of dead bodies after the terminal changes coincident with death had occured. The awakening of this new era in surgery brought about closer cooperation between surgeons and physicians which caused closer study of surgical diseases and led to the better handling of patients from a surgical standpoint. The increase in the amount of surgery led to the building of many hospitals which furnished surgical training for students. The discoveries in medicine, the increase in laboratory facilities and the development of training schools for nurses, all helped to advance the art. The recent organization of the American College of Surgeons with the great efforts it has made toward hospital standardization, its suggestions regarding closed hospital staffs, and the study of all deaths occuring in hospitals, have further tended to elevate the standing of the surgical profession.

The majority of men who practise surgery at the present time have been trained through actual experience under good surgeons, and are capable of doing high class work. The technic for the performance of various types of operations has been largely standardized, and it remains for the present generation to improve such technic, further, and to develop methods which will make surgery safer. An occasional surgeon will make some great discovery which will make his name immortal, but to the great mass of us this will not happen, and our efforts must be directed along lines which will improve the results through surgery, in certain diseases which still have not been thoroughly mastered, and toward making surgery safer. It is with this idea in view, and with the hope of bringing out some points which I feel are of value in reducing surgical mortality, that I have chosen my subject.

It is to be assumed that the highest type of work can be done only by men who are well trained. Surgeons who are not well trained, or who have never acquired the skill necessary to perform operations rapidly and accurately should either make efforts to improve their ability or take up other lines of work. Certainly with the opportunity for training which is now offered, no one should attempt surgery on human beings until the long training necessary to master this art has been obtained. It is possible to acquire much of the skill and accuracy necessary to do good surgery through the daily use of instruments, outside the operating room. A dexterity may be acquired in this way which might never be developed through operating on human beings alone. The continued performance of a single act increases one's speed and accuracy. Beautiful examples of this are seen in the high class base-ball player or the great musician. Their accuracy and skill is remarkable, but when one stops to consider the great number of hours of daily practice necessary to have acquired such skill, it can be easily seen why they overshadow their rivals. Operations which can be rapidly and accurately performed certainly are less dangerous than similar operations slowly and badly performed. Again, a surgeon may be well trained in certain lines and still have little training in others, and operations performed by one not particularly skilled in a particular line of work are less likely to be followed by satisfactory results. The conscience of the surgeon, his honesty and his desire to give his patients the best advantages when a serious operation is being considered, are the factors that must guide him as to whether or not he or some one else can more safely perform the operation contemplated.

The question of judgement as to when an operation is necessary, and as to what type of operation should be performed is developed only through study, experience and keen observation, and on this rests, to a great extent, the success of one practising surgery.

It is gradually being realized that operations may be more safely performed in many instances by preliminary preparation of patients, and by dividing certain operations into stages, and I feel that

when these points are more thoroughly appreciated there will be a further reduction in surgical mortality.

In thyroid surgery for instance, it has been proved that the mortality in cases of hyperthyroidism may be considerably reduced by preparing patients properly for the operation. Patients with simple goiters without hyperthyroidism, who are in a good physical condition, do not need preparation, and unless the operation is contraindicated through some organic disease. it may be safely performed at any time In cases of exophthalmic goiter it has been shown by Plummer during the last two years, that it is possible, through preliminary treatment which consists of a certain amount of rest and the administration of iodin, practically to eliminate the possibility to perform primary thyroidectomy is of Such treatment so improves patients that within a space of one to three weeks the greater number may safely have primary thyroidectomies. Following such treatment the nervousness largely disappears, the pulse and metabolic rates drop, the weight loss stops, and many patients begin to gain in weight. While it has been necessary previously, in dealing with this disease, to perform many preliminary ligations, they are now rarely performed From an economic standpoint, and from the standpoint of the benefit gained by diminishing the degeneration which occurs in the vital organs of the body during the period of active hyperthyroidism, the ability to perform primary thyriodectom is of enormous value. After such patients have been carefully prepared and selected for operation, an operative technic should be used which will diminish as much as possible the possibility of a serious postoperative complication, such as dyspnea, secondary hemorrhage, bronchopneumonia or wound infections in patients who are seriously ill, as many of the patients who die are those who are seriously sick and have postoperative complications. The death rate following thyroidectomy in cases of exophthalmic goiter has been reduced to a point below 1 per cent. Unfortunately. hyperthyroidism associated with adenomatous goiters does not respond to this treatment, but much is to be gained by resting such patients before operation, and attempting to improve the condition of a decompensated heart. When one compares the mortality following such methods of treatment with that which followed early surgery on the thyroid, the difference is astounding. In cases of exophthalmic goiter operated on early, the mortality varied from 25 to 40 per cent, and even until recently it has been difficult to reduce this mortality below 3 or 4 per cent.

Much has been gained also by the preparation of patients with diabetes mellitus for whom operations are necessary. For a long period the mortality following operations in such cases was about 30 per cent. Even before the discovery of insulin it became known that when such patients were prepared properly by dietary measures, the mortality could be considerably diminished. Berkman was able to show a reduction in mortality to 6 per cent by such measures. Since the advent of insulin it has been possible through the proper preparation of the patient by dietary measures and the administration of insulin before and after operation, as indicated, to operate, as Wilder has shown, with almost as much safety on the majority of patients with diabetes mellitus as an normal persons. This is a great gain, as it happens not infrequently that patients with diabetes mellitus suffer from definite surgical conditions which should be operated on.

In gastric surgery Berkman has shown that the mortality is considerably higher in operations performed in the presence of obstructions, such as may be produced by cancer or ulcer, than in operations performed on patients who have received preoperative treatment for such obstructions. The stomachs of such patients are usually filled with foul contents which teem with bacteria, and edema is present in the wall of the stomach. Through constant vomiting and inability to obtain the fluids necessary, the tissues become dehydrated. When the stomach is lavaged twice a day for a few days, and the patient is fed on liquid nourishment, while efforts are made to combat the dehydration by administering fluids by rectum or subcutaneously, an operation for the relief of the obstruction can be very much more safely performed. It is better, in such cases, to perform a simple operation like gastro-enterostomy for relief of the obstruction under local anesthesia. If malignancy is present, it is best to divide the operation in two stages, if possible, performing first a gastro-enterostomy and later a resection.

Performing operations on patients suffering with chronic jaundice is probably one of the highest risks assumed in surgery. Walters has shown that when such patients are prepared for a few days before operation by the intravenous admin-

istration of calcium chlorid, the mortality rate is considerably reduced. When operation is performed on patients of this group who have petechial hemorrhage underneath the skin or mucous membrane, or who bleed from the gums, death almost always follows, and it is very unwise to attempt an operation when such conditions exist. If patients have cancer of the pancreas or pancreatitis with distended gallbladders associated with chronic jaundice, a temporary cholecystostomy only, for the relief of jaundice, should be performed after the patient has been prepared for operation. Properly given, small blood transfusions may be of help after the operation, if slow bleeding occurs and continues.

Radical surgery on the large intestine has always carried a high mortality. In non-malignant cases such mortality should be much lower, and may be reduced by giving patients careful preoperative and postoperative treatment. When such operations are contemplated, it is best to prepare patients by giving first a simple purgative and then allowing only fluids, sugars and fruit juices by mouth, for several days. During the last twenty-four hours before the operation, an opiate like paregoric is given in order to diminish as much as possible the intestinal secretions and to solidify any feces which may remain in the alimentary canal. After such preparation the bowel at operation usually is found empty, or to contain only a small amount of solid residue, and the operation may be performed with but little soiling. If a serious operation such as colectomy is to be performed, it may be carried out more safely in stages, first an ileosigmoidostomy and later colectomy.

The highest mortality following operations on the colon is in cases of cancer, and is probably due to several factors: (1) the presence of severe infection in the tissues surrounding the growth, (2) partial or complete obstruction, and (3) the lowered resistance of patients from the absorption of toxins generated by the infection and obstruction present, and from the cachexia which develops from the malignancy. Peritonitis, which follows operation in such cases, probably usually results from a combination of these factors. When an operation on such a patient is contemplated, a preliminary preparation for a few days if there is no serious obstruction, is, as I have mentioned, of great value. An effort should be made to carry out the operation in stages, and to avoid, when possible, primary resections, particularly if obstruction is present. It is far safer to perform first a colostomy or some short circuiting type of anastomosis which will relieve the obstruction, and later to remove the growth; finally, the colostomy or enterostomy may be closed, if it is possible to do so. If there is complete obstruction it should be relieved by some simple operation like an enterostomy or an appendicostomy. If tumors are present in portions of the bowels which are mobile, it is often possible to perform the Mikulicz type of resection in stages. In this operation the loop of bowel containing the growth is lifted out through the incision in the abdominal wall, and the incision closed around it. After ten or twelve days, the loop, which has been brought out, and which contains the tumor, may be cut off and later the resulting colostomy closed. An operation of this type is especially safe if growths are in the sigmoid loop, and may also be used if growths are in the transverse colon. Walters has shown that there is considerable reduction in mortality when it is used, as compared with primary resections. In resecting cancers of the bowel it should be remembered that the inflamed tissues are loaded with virulent organisms; they should be handled as gently as possible and every effort should be made to prevent lowering the resistance of the surrounding tissues by trauma.

The postoperative treatment following operations on the colon is important. The wall of the colon is thin, and leakage may easily occur when gas distention develops in the presence of infected sutures. In order to diminish the possibility of gas distention, it is safer in primary resections to make an enterostomy, with a catheter, in the bowel proximal to the growth. After the operation the accumulation of gas and the prevention of peristalsis may also be greatly diminished by the withdrawal of all fluids by mouth or by rectum for a period of four or five days. During this period about 2000 to 2500 c. c. of sodium chlorid solution may be administered subcutaneously daily. It is often possible for patients to remain under such treatment for a number of days with little evidence of gas formation. After eight or ten days, a simple laxative, like mineral oil or milk of magnesia, will usually suffice to obtain the satisfactory passage of gas and feces.

The rectum may be resected for cancer much more safely following preliminary colostomy, and the one stage operation for resection of the rectum has been largely

abandoned. An abdominal exploration should be performed at the time the colostomy is made, and in certain cases in which growths may still be removed, intra-abdominal metastasis is found which make radical posterior resection later, inadvisable. After the colostomy has been made and opened, the loop of bowel between the colostomy and the rectum is irrigated, and in this way the infected material in the bowel is largely removed. After two or two and one-half weeks, a posterior resection may be accomplished without soiling. The colostomy serves to prevent soiling at the time of the operation and also the escape of feces through the wound after the operation; in this way the mortality is reduced by diminishing the chance for sepsis.

Obesity is a factor which has considerable bearing on surgical mortality. A higher mortality follows serious operations on markedly obese patients than follows similar operations on patients of normal weight. The mortality in such cases may be reduced by the careful reduction of about one-tenth of the body weight. This may be accomplished gradually by dietary measures and by the administration of small doses of thyroid extract. In certain of such patients, several weeks or even months of treatment are required in order to obtain the desired weight reduction. If a patient weighs more than 175 pounds, and a serious operation is contemplated, it is advisable to reduce the weight.

The mortality following prostatectomy has been greatly reduced through the proper preparation of such patients before operation. As a rule, patients without retention need little preparation, but when there is retention of more than an ounce or two it is best to relieve it by the use of a catheter several times a day, or by the introduction of a permanent catheter. When a catheter cannot be borne a preliminary suprapubic cystostomy drainage offers the patient the best chance. After the patient's general condition and renal function improves, prostatectomy may be performed.

In acute abdominal conditions like obstruction and acute appendicitis, the mortality is considerably lowered by an early operation. If acute obstruction is suspected, it is often better to operate early even though the diagnosis cannot be absolutely established, and even though the findings at operation may prove negative, than it is to allow the condition to proceed until there can be no doubt that obstruction is present, when operation may be of no avail. In such cases radical operations should always be avoided, and an attempt made to relieve the obstruction only by some type of enterostomy or colostomy. Later, if a radical operation is indicated, it may be performed.

The mortality following operations for acute appendicitis is still quite high. During the first twenty-four hours of the attack they may be performed with a risk little higher than that following operations for chronic appendicitis. After the attack has progressed for forty-eight hours, patients enter a period during which operation is much more dangerous, and from then until the fifth day it is recognized that certain patients stand a better chance for recovery if not operated on. Many patients seen during the period from the forty-eighth hour to the fifth day, who have localized pain without evidences of a spreading type of peritonitis, may be operated on safely, but operations during this period in the presence of evidences of a spreading peritonitis through an extension of the tenderness to points considerably beyond the appendiceal region, gaseous distention, rapid pulse, and so forth, are performed with great risk. Many patients of this type will also succumb if treated medically, but the experience of the most capable surgeons of this country shows that the mortality is lower if such patients are treated first by the Ochsner method, until they gain control of the infection present, and then are operated on. About the sixth or seventh day an immunity appears to be established, and if at this time the pulse drops, the operation may be more safely performed.

The majority of patients who develop acute gall-bladder attacks recover from the attacks if treated medically, and after six or seven days an operation may be quite safely performed. A few such patients, however, who have impacted stones with a distended or gangrenous gall-bladder, and who are not relieved of pain by ordinary measures, must be operated on. Experience has shown that drainage of the gall-bladder, in acute cases, is safer than cholecystectomy.

The mortality has been considerably diminished in acute pelvic infections by treating such patients by rest in bed, and with hot douches and ice bags, until the temperature has remained close to normal for a short period. By this time an immunity is established.

Radium has been the means of reducing the mortality in the treatment of certain conditions. Patients near the menopause, with excessive uterine bleeding, and in whom malignancy of the fundus has been ruled out as nearly as possible by a preliminary curettage, are nearly always cured by the administration of a good-sized dose of intra-uterine radiation. This eliminates the risk associated with hysterectomy. Patients with fibromas which increase the size of the uterus to two or three times normal, who have reached the age of forty or more, may be more safely treated with radium than by operation. Young women with small fibromas should have myomectomies in order to preserve menstruation and to allow a chance for pregnancy. Radium also has reduced the mortality in the treatment of fibromas associated with bleeding in patients suffering from other organic diseases, such as heart diseases, nephritis, and anemia, etc. Operation is still advisable in certain early cases of cancer of the cervix when the growth is limited to the cervix, but it has been shown that the results obtained by radium properly administered are about the same as those obtained by surgery. All patients with extensive involvement of the cervix and of the vaginal wall are best treated with radium, thus avoiding the risk of hysterectomy. Because of the excellent results obtained by operating in cases of cancer of the body of the uterus, it probably is best to perform a hysterectomy, as the increased chance for cure overbalances the risk of operation.

The mortality has been greatly reduced and the end results much improved by treating cancer of the tongue with radium. The implantation of radium points around the growth is regarded as the best method of treatment. In many cases the growth may be completely destroyed, while in others growths of the tongue which formerly would have been inoperable, are controlled to such an extent that a local excision with cautery may be done later. The mortality from such excisions is practically nil. Radium, however, does not prevent extension of the malignancy to the cervical glands, and these should be excised surgically.

Anesthesia as a factor in surgical mortality deserves considerable attention, and Crile's efforts to develop some method of producing anesthesia which will be followed with the least chance of postoperative complication, are very noteworthy. At present it appears as though a combination of a light general anesthesia, such as nitrous oxide, or ethylene, combined with local anesthesia and enough ether to produce relaxation, is most suitable for patients who require general anesthesia. Many operations are easily, and probably more safely, performed under local anesthesia, but whether or not such anesthesia may be used, depends on the general make-up of the surgeon and of the patient. Although it is too early to make definite assertions, it appears as though ethylene gas, recently introduced as an anesthetic, will prove a valuable addition to present anesthetics. This gas may be regarded as occupying an intermediate position between nitrous oxid and ether, and by its use nearly all extra-abdominal operations may be performed with ease. In intra-abdominal operations the relaxation is usually insufficient, and, in most cases, it is necessary to use a small amount of ether besides the ethylene gas, and also to inject the peritoneum with novocain. Ethylene gas produces rapid anesthesia, and its administration gives the patient as little discomfort as any anesthetic known. While under its effects, patients breathe almost normally and perspire very little, if at all. The rapidity with which they awaken and gain control of the reflexes diminishes greatly the possibility of inspiration pneumonia.

One could enumerate many other ways of reducing mortality, but it is not my desire to go into too many details. The point which I wish especially to emphasize is the fact that the surgeons of the present generation should appreciate the importance of good judgment in the selection of patients for operation, the proper preparation of such patients, and the selection of an operation which may be performed without a fatal termination. It is often necessary, in desperate cases, to operate in the face of great risk, and if death occurs, it is easy to quiet one's conscience, but it is a great calamity to have death occur if operation has been advised in a patient who is suffering some inconvenience from a disease, but who might live indefinitely if left alone. We are living in an age when surgery has reached its highest efficiency, and the surgeons of this generation must not lag behind, but must help in some way to advance the art which they have chosen as their life work, and in this way place surgery on a still firmer basis.

THE GOLDEN RULE IN MEDICINE*

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"Therefore all things whatsoever ye would that men should do to you do you even so to them."

It is recorded in the book of Genesis that God in His great wisdom created man, in His own image, a little lower than the Angels, crowned him with honor and glory, breathed into his nostrils the breath of life and man became a living soul. This divine declaration to my mind settles the question of Darwin's theory.

From the time man was created, he has endeavored to adjust and readjust himself to the conditions that oncoming civilization demanded, and in endeavoring to fully establish his adjustments he has formulated from time to time codes of ethics which were applicable to the needs of the day in which he lived—"Ethics may be defined as the science of human duty." A code of ethics is a carefully formulated system of principles or rules of practice for the guidance of a particular group of individuals, such as the members of a medical profession. The Mosaic law is a code of ethics in the broadest sense as applied to humanity at large. The development of codes of ethics is the indication of the evolution and growth of moral consciousness. Ethics and morality are not always synonymous; neither is ethics and legality.

"Right" and "Wrong" are terms which have different meanings and interpretations at different periods of the world's history.

The necessity for specific principles for the guidance of individuals having common interests in addition to the tenets of religion and morality has been recognized from the earliest historical periods." Probably the most ancient code of professional ethics is the Hippocratic oath which has been in existence for about 2500 years, and which is an eminently suitable starting point for a discussion of the subject. The Hippocratic oath is a splendid example of exalted idealism couched in virile dignified language, and with minor changes applicable to present day conditions. The earliest evidence of code-writing in the United States seems to be the code adopted by the Philadelphia College of Pharmacy in 1848. Then in 1852, the Code of the American Pharmaceutists and Druggists throughout the United States. These have been followed by quite a number of codes for pharmacists and druggists.

In 1891 the United Typothetae of America adopted its code under which it is acting today. The Typothetae code was followed by that of the National Confectioner's Association, adopted in 1901. The code of the American Medical Association was adopted in 1903, (revised in 1912), and in 1904. The National Food Broker's Association developed and subscribed to a code. The code of theAmerican Bar Association was adopted in 1908.

So we see that although most of us have been more or less under the impression that written codes of ethics were peculiar to professions until the last four or five years, Associations of all tradesmen and merchants were actively engaged in setting down written standards of business conduct before some of our most prominent professions had adopted formally written expressions of standards of professional conduct. The Golden Rule is applicable to every phase of human activity, endeavor and to the conduct and relations of all men through all ages to come. We are here in all the vigor of our manhood ready and willing to do our part individually and as a profession as a whole in the world's great work, anxious to have a share in the great civic, moral industrial and professional uplift of our day and time, and further desirious of establishing, maintaining and perpetuating the highest professional standards and ideals.

In 1924 we find ourselves in the midst of no small proportions—This movement is not entirely the result of professional activities but is the tangible evidence of the gradual chemicalization of the minds of the world, however, subscribed to from the earliest historical periods by the medical profession of state and nation.

The medical profession has been giving serious thought to this particular aspect of life; that of making professional standards rest on a common plane with social standards.

The wisdom and scholarship of Rabbi Hillel, an elderly contemporary, and according to some, the teacher of the lowly Nazerine, was challenged by a scoffing libertine asking that he express all the teachings of God in a space of time no longer than one could endure bearing up his weight on one leg. "Certainly" said the Rabbi, "here it is, all of it, love thy neighbor as thyself, all the rest is mere commentary."

The form of our professional organiza-

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tion is the most democratic, based as it is, upon representation of all kinds of human endeavor and eliminating all politics and creeds. Sitting together as we do and breaking bread together regardless of all conventional social distinctions, we are endeavoring to give our country a demonstration of equality, friendship, unity and good will sorely needed in this weary old world at this time.

In the 60's our country demonstrated it's geographical unity to the disappointment of many jealous nations and in the recent great world war it gave concrete and abundant evidence of the unity of it's people to the amazement of the whole world—In spite of this, the bigot and the chauvinist are abroad spreading the gospel of discontent, hate, and strife. Neighbor is set against neighbor, employee against employer, members of one creed against those of another and strenuous attempts are being made to break up our united nation into strata and castes, based upon chronology, theology, racial prejudice as well as upon geographic origin, and saturating them with repellant antipathies. It is becoming no longer a question what an individual is, but whetner his citizenship is one of accident or of choice and whether his remote ancestors worshipped Odin, Jupiter or the Golden Calf. History is being distorted and science prostituted to furnish a basis for these false and baneful distinctions, notwithstanding the fact that our penitentiaries on the one hand and the galaxies of heroes in war and peace on the other know of no such differences—May the great God of Heaven in whom we live, move and have our being thwart the logical effect of this baneful propaganda and bring it to naught, in the interests of his people, and that we may not be made to go through the horrible experiences of the 60's before unity is restored.

In this crisis the medical profession is setting an excellent example, one thoroughly consistent with the principles laid down by the founders of our beloved country "America." For what is America? Let a descendant of the psalmist tell it in his own way.

"God built a continent of glory and filled it with treasures untold—He carpeted it with soft rolling prairies and pillowed it with thundering mountains, He studded it with soft flowing fountains and traced it with long winding streams. He graced it with deep shadowed forests and filled them with song. Then He called a thousand people and summoned the bravest among them—they came from the ends of the earth bearing a gift and hope—the glow of adventure was in their eyes and in their souls the glory of hope. And out of the bounty of earth and the labors of men —out of the longing of hearts and the prayers of souls—out of the memories of ages and the hopes of the world, God fashioned a nation in love, blessed it with a purpose divine and called it America. This America is what Woodrow Wilson stood for. He endeavored to lay down certain principles to insure everlasting peace not only to our nation, but to all nations of the earth. When this great statesman was dying, when his grasp had grown childish weak and his eyes had put on a dying stare he remarked to Dr. Grayson (his physician) "you have done the best you could for me, I am a broken machine, I am ready," then he sighed, breathed his last and went into the great beyond from whence no stranger has ever returned.

Picture, if you can, our professional structure trying to function, today, without standards of ethical conduct. How far would we go using the old haphazard measure of—"hand and thumb"—a true meeting of minds would be extremely difficult of realization. A smooth running, efficient and harmonious economic system would be almost an unknown quantity.

The profession today, within nations and between nations is trying to function with established common standards of professional morality and service. The determination adoption and observance of standards, of weights and measures has done. more towards advancing civilization by placing business on a more sound and economic basis than will the fixing, adopting and observance of standards of professional and business morality and service. Not until such standards have been developed and put into practice will there be such a thing as equality of opportunity in the business and professional world. We will have equality of opportunity when competition is based on quality, and professional and business service is 100 per cent honest. The medical profession is constantly urging higher standards of professional conduct.

The individual member of the medical profession is urged to take an active part in the Mississippi State Medical Association and as a member of the medical profession to subscribe to a code of standard and correct practice.

Through the Mississippi State Medical

Association a physician is placed in a favorable position to foster this great movement. Some may ask, "why do we need written rules of conduct when we have the Golden Rule on which to base our professional conduct?" They will follow this question with the true assertion that rarely does one come in contact with the professional man who is striving to do other than the right thing in conducting his affairs. But in our complex society even the sincere desire to be governed by the Golden Rule does not go very far toward supplying answers which are accurate and true when qusetions of ethical procedure are encountered. It is necessary and paramount to have specific rules of conduct plainly stated and direct in their application to define professional and business relations, rules which state what a man shall do and what he shall not do. We also have the Ten Commandments and all recognize the additional value of their definiteness with reference to social and professional relationship. The same thought applies in every-day professional life, the relations between patient and doctor, physician and druggist, the professional man and the laity.

Each added relationship multiplies the difficulties of correct professional conduct. Hard and deep thinking is often necessary to decide whether a certain contemplated action is right or wrong. This should remind a professional man that there is a greater and higher power to whom we must subscribe and that in our weakness we are prone to exclaim as the poet—

"Guide me O thou great Jehova,
Pilgrim through this barren land,
I am weak but thou art mighty,
Hold me with thy powerful hand."

Professional customs, many of which have been practiced so long, that few inquire as to their ethical correctness, introduce further complications. So it is that modern methods of conducting professional activities are responsible for the need of an ethical code of professional relationships and an adequate code of standards of correct practice for the profession at large. A clearly defined and written code of ethics, honestly subscribed to and practiced, helps men to think clearly and correctly, and so to act honorably. It helps not only those whose profession has been conducted with probity, integrity and honesty of purpose, but strengthens their will and ambitions to continue in the right. It provides also an incentive for those whose moral conscience is insufficiently quickened.

Perhaps equally important is the fact that a code serves as a gauge by which the public may determine the basis on which a medical profession is building and operating. It is reasonable and fair to say that prescribed codes of practice will do much to foster confidence, good will and favorable consideration of the public. At present the underlying difficulty in professional codes is a lack of scope and standardization.

The general code should be broad in its scope and specific in its application, treating each factor of a profession according to its relative importance. One finds little guidance in glittering generalities.

The spirit of the times as well as good professional conduct and sound economics demand a more exacting and a more sensitive professional and business conscience.

The various recognized, ethical well established medical societies are fostering the movement of annual physical examinations of individuals. These examinations to be made by men who are competent to conduct a careful, painstaking and scientific examination, and those who will not overlook a dangerous heart, when no murmurs are present or audible. The most dangerous heart is the murmurless heart, and the highest mortality today in the United States is due to diseases of this organ.

There is only one exception to the rule that a little learning is a dangerous thing, this is to be found in the early recognition of the first manifestations of cancer, a little knowledge in the beginning will save suffering and a miserable death if applied, and action and advice are sought early. This brings us to an expression of the Pope who said—

"A little learning is a dangerous thing;
Drink deep, or taste not the Pierian Spring—
There shallow draughts intoxicate the brain,
While drinking largely, sobers us again."

The application of the Golden Rule by the profession to the public at large finds its expression in our endeavor to protect the sick, helpless, ignorant, the educated, refined and suffering humanity in general, the world over, against frauds, quactics, practics, and the million other dishonest, unloyal, ignorant, unfitted individuals

who would rob you of the last penny for their wordly gain.

Listen—Did you ever know of an Abrams adherent, a chiropractor or any other fraud or quack to raise one hand, to utter one word, or to take one step in conserving your health, well-being and happiness? I say NO, and challenge any fair-minded, God-fearing man or woman to bring forth any evidence of an affirmative character.

It is due to the knowledge and thorough understanding of the medical profession that Bubonic plague which, once under the name of black death, decimated the populations of the earth, is now under the control of the long, strong iron arm and hand of public health administration. Small pox, typhoid, malaria, yellow fever, and many other formidable diseases are under our control and the public enjoy immunity to them and rest in sweet repose under the influences and activities of a well-organized medical profession and public health service.

The prevention of tetanus, the prevention as well as the cure of diphtheria in its early stages, should command the respect and confidence of the laity. The recent discovery of Insulin and with it an application of rigid scientific dietetic measures, is a blessing to humanity and a God's-send to the unfortunate diabetic.

The complexities of our modern civilization demand that a physcian in order to meet the scientific demands of his patient of today, must narrow his field, systematize his time and broaden his vision and knowledge.

The thorough systematic education, the skill and availability of the services of the regular physician must instinctively create in the minds of the people an appreciation of his superior claims to their confidence, and thus the medical profession becomes a law for its own protection, and which must prove stronger and more enduring than acts of assemblies or rulings of courts. Its efficiency and influence with the public rest solely on the amount of its useful, scientific and practical professional knowledge. Let us at all times and seasons insist on increasing these by every possible means. Ignorance and Charlatanism should be made odious by contrast.

In the hard and desperate struggle, we welcome and embrace the Woman's Auxiliary in stimulating the physician in doing his best, for they have outlined their functions which embrace: The great interest and pleasure of helping to carry on the aim of this body of professional men they have placed on the highest pedestal. Increased understanding and sympathy of the husband's work, together with helping to promote local unity and harmony among doctor's families, is part of the great aim of their organization. As they look to the advancement of health and education, which is the aim of the medical profession, should we by doing so become extinct, they are looking directly to the place of places "our homes." They say come let us play a part in furthering these splendid principles.

The Economic Side of Medicine.

The economics of every profession is often seriously considered and discussed. Did you know my good people that statistical data prove that the time-payment plan is the most insidious and destructive to the economic side of medicine and business as it affects the physician and laity.

Automobiles head the list—far out in front. It is said that 85 per cent of all cars in the hands of private owners have been sold on the time-payment plan. It is also stated that no less than 6,000,000 persons with incomes of less than forty dollars per week own automobiles—you will know how much the upkeep is. It has been said that the individual who owns an automobile should have a blacksmith shop in one end of the garage and a bank account in the other. Pianos, radio outfits, phonographs, typewriters and furniture, push the automobile for ascendency in the deferred payment market.

In 1923, it is stated, 300,000 pianos were sold for a sum approximating $120,000,000 and from 75 to 90 per cent of these were sold on the time-payment plan. Fully 90 per cent of the phonographs sold are paid for in installments. More than $50,000,000 worth of radio sets and furnishings were bought last year in the same way, and 65 per cent of all washing machines and vacuum cleaners disposed of were bought "on time." The foregoing is what the ignorant negro calls the "excitement plan." The slogan should be "Pay as you go and if you can't pay don't go."

Standardization of Hospitals.

The all-important question has been asked, what is the matter with our hospitals? I believe personally that hospitals should not be under political control, but the politicians should furnish or appropriate the necessary funds for the establishment and maintenance of same. Every hospital in the state should be standard-

ized. This means that a complete written record should be preserved of the patient admitted to any hospital, a clear and well-defined history, followed by a complete record of physical examination, and treatment employed if surgical, medical, or otherwise.

The Physician and the Druggist.

The time is not far distant when a regularly licensed physician will not patronize a drug store in which patent medicines are for sale, but will demand that only chemically pure drugs be available with known contents to be used in the filling of prescriptions. We will no longer witness the triad show in front of drug stores, which consists of a white man and two negroes to furnish music in order to attract crowds of ignorant people, as well as inducing them to buy of their medicines of unknown ingredientes and promises of miraculous cures.

The physician is often called upon to escort a patient through the valleys and o'er hills of acute and chronic illness, and too often we are led to the approach where the patient leaves the physician standing with uplifted hands, only to see him walk down into and through the valley of the shadow of death, only being guided by the flickering light of ignorance and superstition.

The concrete, definite, specific and honest application of the Golden Rule in medicine is that a patient has a right to know the diagnosis in his case if it is possible for such to be made. Next the treatment advised or administered should, in my opinion, be made known to the patient. The prognostic outlook should be forecasted and the patient should be in full possession of all the fundamental facts, as well as being made acquainted with every detail of his case.

In the case of a surgical operation a detailed description of findings and what was done should be thoroughly understood by the patient.

The foregoing fundamental facts in the application of the Golden Rule in medicine will insure good-will to the physician and layman alike, as well as insuring everlasting peace and good-will to the nations of the earth.

"Therefore all things whatsoever ye would that men
Should do to you do you even so to them."

STATUS OF MORBIDITY REPORTING IN LOUISIANA.*

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By morbidity reporting is meant the registration with the central State office of certain specified diseases. These reportable diseases are familiar to all of us and need no mentioning here. They are considered reportable for the principal reason that they are believed to be communicable. The reason for reporting such diseases is obvious.

It is generally agreed that the primary function of any health organization is the control of epidemic diseases. If this can be accomplished it means that not only has sickness been reduced, but that lives have been saved. Plainly, morbidity and mortality cannot be combated if there is no knowledge of such force upon which to base action.

The value of morbidity returns may be summarized as follows: 1. They make possible the early identification of epidemics with a consequent effort to control. 2. They enable the health department to do the most effective work because some of the reportable diseases are controllable. 3. They make possible an accurate study of the forces of morbidity within the state. 4. They permit case fatality rates to be computed and studied. 5. They allow studies to be made of the relative susceptibility of different classes of humanity.

The importance of the knowledge of the occurrence of certain communicable diseases to the central office is conspicuous. Such knowledge upon its receipt can be disseminated to those sources that may be effective in the checking of an epidemic.

Complete morbidity returns many times provide the quickest and surest means of locating the focus of an incipient epidemic. For example, if a milk-borne diphtheria outbreak should be noted, from the morbidity records it would be possible to see from a spot map that the cases were confined to a definite milk route, thereby pointing specifically to either a diphtheria carrier or to an unrecognized case somewhere in the employment of the dairy in question. Upon such evidence control methods could be promptly and effectively employed. It is plain that without such morbidity records the determination of the

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focus of infection would be difficult and perhaps lead to no mean epidemic before the source might be found.

Many instances of the value of having prompt and accurate morbidity data for the effective control of epidemics might be mentioned. It is conceivable that a state wide infection might be avoided if epidemiological data were adequate; while on tne other hand it is most inconceivable to think of doing very effective work in the control of epidemics without the proper morbidity records.

One of the outstanding values of complete morbidity knowledge is the aid it offers any health organization in defining its most effective program. In what localities should public health endeavor be concentrated? Where in the state are there occuring the greatest number of controllable diseases? How, in the absence of complete morbidity records, can such questions be decided?

Our State Health Department is operating upon a definite budget. It is our specific obligation to get the most returns from our efforts with the least expenditure of state funds. This is impossible unless we have the necessary information to guide us. The source of this information is the morbidity returns.

In the present stage of public health work it is necessary for any health organization to concentrate upon those diseases that occupy the most important places in the morbidity reports. It is, of course, necessary that we continue in our efforts to completely stamp out those diseases that we have thus far succeeded in materially influencing. But if such a procedure is followed it should be only in those localities in which all morbidity is relatively low. In other words, the objective of any health program should be to control those controllable diseases that are contributing the greatest to the morbidity record.

This is reasonable and logical from two standpoints. First, we would be (if our efforts were at all successful) accomplishing the very greatest amount of good in the way of preventing sickness and possible deaths. Second, we would be getting the greatest returns from our financial investment. To illustrate this point let us take the two diseases of diphtheria and typhoid fever. The former disease yet occupies a very prominent place in both the morbidity and mortality reports in spite of the fact that we have been and are using antitoxin. And here it should be said that the use of antitoxin contributes very little, if anything, toward the final and a permanent control and eradication of diphtheria. The use of toxin-antitoxin will probably do more toward realizing this result than all the antitoxin that might be given. Typhoid fever, like diphtheria, is a theoretically controllable disease and typifies what public health can do in the control of diseases, the epidemiology of which is thoroughly known. Now in a given community if diphtheria were found to be a greater contributor to the total morbidity rate than typhoid the natural course to follow would be an intensive endeavor to control diphtheria and completely disregard typhoid fever (provided the community was equipped with a safe water supply and proper waste disposal). This would be permissible on the basis that whatever time and money were spent on typhoid would render but relatively little progress. In other words there seems to be an invariable residuum of morbidity, the complete eradication of which, would require an inordinate expenditure of money and dissipation of time and energy. We can decrease morbidity rates to a certain minimum beyond which further reduction becomes practically impossible. Typhoid fever in many localities has reached this almost irreducible minimum. The cases that comprise this resultant minimum are traceable in most instances to carriers. The problem of successful isolation and control of typhoid carriers may be said to be as yet unsolved. It would be, therefore, folly to continue to direct expensive public health measures toward the control of typhoid in such localities. Smallpox represents another disease that is in the same category as typhoid in many places. It is interesting to note in passing that there has been reported in the State of Louisiana 5,345 cases of smallpox in the last seven years.

It follows, therefore, that if we had reliable morbidity data we could effectively outline our crusades against disease in Louisiana, and get the greatest return from our investment.

About the great number of diseases prevalent today we have practically no knowledge concerning their specific forces. That is to say, we have practically no idea of the probability of a given disease attacking a particular class of individuals. For example, what is the probability of a white female, aged 20, living in the city, and employed as a stenographer, of contracting tuberculosis. Or what is the prob-

ability of a white female child, aged 5, living in the country, contracting diphtheria, measles or whooping cough? If we had such information it would be very helpful to us in the proper scientific handling of suspected cases, contacts and in general the most effective application of quarantine measures. Moreover, we would be in a better position to apply the various principles of preventive medicine because we would know those classes of individuals in which the probability of acquiring infection by the different diseases was the greatest. Besides this knowledge, such specific rates would furnish excellent means of comparison of morbidity forces in one locality with another, and of measuring accurately the progress that might be made by public health.

The value of morbidity records in allowing the computation of case fatality rates is an important one. If we assume that our morbidity records are adequate (and we have no reason to believe in many states they are not) we can determine, from the number of cases and the number of deaths reported in a given time period, case fatality rates. Such rates would tell us what the probability of dying with a given disease is. The prognoses that are made every day by the medical profession are based upon just such rates. Unfortunately, the data from which these rates have been taken are in general from hospital records. I think it will be agreed by all of you that hospital cases are on a whole an adversely selected group. This being true, the resultant case fatality rates may be taken as not being true bases for prognostication. If we had, therefore, accurate and complete data upon morbidity we could arrive at far more dependable case fatality rates than we now have.

The final value of morbidity records is the field they offer for original investigations or research. At the present time this field is practically untouched for the sole reason that the data necessary are not available. Many broad biological problems of a distinctive importance to man are capable of solution when the necessary information is collected. For example, that yet curious and unexplained phenomenon of susceptibility could be attacked. By refined methods of statistical research there is no question but that if we had adequate data we could do much toward getting at an explanation of the inheritance of natural susceptibility or resistance of different classes of individuals. The scope of such research is almost unlimited.

It is necessary now to point out the shortcomings of inadequate morbidity data. What has been said it is hoped will make clear the indefinite number of valuable contributions that might be added to our present knowledge. Furthermore I think it is clear to you now how many fallacious conclusions and impressions might be drawn from incomplete data. Such data tend always to lead us astray unless we are aware of their dangers. *About the only value that incomplete morbidity records have it to instil within us a hope that some day they will be complete. Otherwise they are dangerous.*

Let us now turn to a brief consideration of the status of the morbidity reporting in the state of Louisiana, for we are now in position to appreciate their lamentable condition.

The morbidity data that we have collected and tabulated cover a period of seven years—1916—1922. In order to trace the worst offenders we have tabulated the reports of cases and deaths for these years by parishes. The task of including all diseases would have been too great. The seven diseases, diphtheria, gonorrhea, malaria, smallpox, syphilis, tuberculosis and typhoid fever have been chosen for study. It is felt that these diseases may be taken as representing the true status of reporting in this state.

Examination of the data by individual years for the separate parishes reveals the gross incompleteness of reporting. Unfortunately the number of returns in most of the parishes is too small to allow much to be said. In other words, where we find say, two cases or even three or five of a given disease and the same number of deaths, although such hundred per cent fatality is unlikely, it is not improbable. While if there were thirty-five cases say, with thirty-five deaths in a given area, although still possible the probability of such occurrence is very, very small. There are, however, repeated instances of the registration within a given year of more deaths than cases of the different diseases studied. This is particularly true of tuberculosis. In the case of this disease we are dealing with a chronic infection (only pulmonary tuberculosis is included) which could account for some of the discrepancies between the case and death figures. But the differences for the state in the years studied range as great as six times as many deaths as there are cases. In only one instance, the year 1921, were there more cases than deaths, which

year showed a case fatality rate of 66 per cent.

The figures on tuberculosis for the state as a whole are: 1916, 1,369 deaths and 324 cases; in 1917, 1,500 deaths, 334 cases; 1918, 1,964 deaths, 322 cases; 1919, 1,514 deaths and 286 cases; 1920, 1,616 deaths and 555 cases; 1921, 1,414 deaths and 2,144 cases; in 1922 there were 1,388 deaths and 1,011 cases. The figures for the seven years combined are 4,976 cases and 10,765 deaths. These figures are exclusive of New Orleans (Orleans Parish.) I think the story revealed by these figures is sufficiently cogent. They need no further comment.

Diphtheria presents a more encouraging picture of morbidity reporting. The case fatality rates for the years 1916 to 1922 inclusive, respectively are: 15.5, 20.0, 32.9, 41.4, 32.7, 27.1 and 27.9. Surely the case fatality rates in this state are not as high as these figures would indicate. An interesting feature about these figures is their variability. It is a bit unreasonable to think that the case fatality of diphtheria should vary from 15 per cent to 41 per cent within four years' time. It should be reiterated here that these rates mean, that of the number of cases of diphtheria so many die. Such rates are, therefore, different from the so-called death rates which give us the number of individuals dying of a given disease per thousand population. What this means is, that the case fatality rate is not necessarily affected by the fluctuations of the incidence of disease. Variations in case fatality rates, therefore represent variations in the virulence of the infective organism and the resistance of those infected. Consequently. we should not expect such variation to occur in case fatality rates as is noticed in the above diphtheria rates.

The rates on gonorrhea for the years 1916-22 respectively are 0.8, 1.1, 1.2, 0.1, 0.3, 1.1, 1.4.

The malaria rates for the seven years are: 43.0, 20.8, 27.7, 22.5, 27.1, 21.6, 27.4. These figures are obviously misstatements of true conditions.

The case fatality rates for smallpox for the years studied are: 0.2, 0.7, 2.1, 16.3, 4.8, 1.6, 0.3. Again we are confronted with a conspicuously erroneous picture.

The figures on syphilis are likewise ludicrously interesting. They are: 41.6, 57.8, 90.8, 15.8, 16.3, 14.5, 15.5. Comment upon these figures would be superfluous.

Finally in the case of typhoid fever, a disease we would surely expect adequate data upon, are found rates that are in keeping with those already listed. The case fatality rates for this disease over the seven years are: 39.2, 38.3, 51.8, 41.2, 41.2, 36.1, 27.9. Any one of us knows that the true case fatality rate of typhoid is about ten; therefore of how much value are the above rates?

The figures by years have been added and rates have been computed on the totals. They are: for diphtheria, 30.0, gonorrhea 0.6, malaria 26.5, smallpox 4.5, syphilis 20.9, typhoid 40.7. These figures reveal a sad situation. They mean one of two things, and to an unsophisticated, casual observer, either might be taken as the right thing. They indicate that either the morbidity is not adequately reported (which each of us knows to be the true condition), or that the medical profession of this state is relatively unsuccessful in its practice of curative medicine (which we know is untrue).

The State Health Department is doing the best it can with the data that it has to work with. We are impatient because we are ambitious. The success of the health department in its epidemiological work is in a large measure dependent upon the medical profession of the State. I trust this paper will corroborate this statement, and that each of you who has listened to its presentation, will pledge himself to lend us his sincerest co-operation in the future.

DISCUSSION

Dr. Homer Dupuy (New Orleans): I shall limit my remarks entirely to the question of diphtheria. What shall we do with the carrier? We know that there is an increase in the incidence of diphtheria by reason of concentration of population On the other hand, we know that with this potent agent, antitoxin, we have reduced the morbidity of diphtheria, but the incidence is on the increase—because we have not mastered the question of the carrier. We have two kinds—active and passive carriers. The patient who has had diphtheria may remain a carrier indefinitely. We have had cases where we removed tonsils and adenoids and took various other precautionary measures, but they still remain carriers.

But there is a ray of hope. Think of what we have already done with the Shick test. We can take a group of children and with mathematical precision segregate those who will be liable to catch diphtheria from those who are immune. Then comes toxin antitoxin. We hope some day to be able to see what toxin antitoxin will do for the carrier. Toxin antitoxin being a vaccination process, we hope to catch the active carrier, the fellow who has had diphtheria and is running around giving it to the school. There is the ray of hope. We are working along this line and hope some day to have something to offer.

"NEWER ASPECTS OF CALCIUM METABOLISM"*

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All of us have, no doubt, been impressed by the recent emphasis that has been placed upon the importance of the calcium ion and the role that it plays in maintaining a normal medium within which the tissues of the body can best function. Until comparatively recently the clinician was satisfied to attribute to calcium salts the functions of making bone and of assisting in blood coagulation, together with the knowledge that calcium was an essential ingredient in a normal diet.

With the gradual accession of knowledge from various sources, interest has become acute, until now we are in danger of imperilling the lime salts with the same fate that has been meted out to the endocrine glands—that of becoming the dumping ground for obscure pathological physiology. It is with the hope of avoiding such a fate that this brief resumé of the facts regarding the solution, absorption and utilization of calcium is set forth.

Let us bear in mind one important fundamental fact with regard to calcium, that is, that almost all of its salts are insoluble in alkaline and some only very slightly soluble in acid medium. As an example of the former we cite calcium oxalate, of the latter tri-calcium phosphate. When calcium is held in combination with an organic substance, it is rendered less soluble by such combination; thus the calcium caseinate of milk when acted on by acid rennin is coverted into another compound called calcium paracaseinate, which is less soluble than the corresponding calcium caseinate present in the milk from which it is formed and, therefore, when the milk curdles it is precipitated as a solid.

We must therefore bear in mind that the calcium which we ingest is not always an isolated, inorganic salt, soluble in the enteric juices and readily absorbed, for it is subjected to combination with other salts, to acid and alkaline mediums and to the formation of in-soluble soaps.

There is no tissue in the body that does not contain calcium and of course the bones contain it in largest amount. Here we find it as tri-calcium phosphate, a relatively insoluble salt. It is for the phosphates that calcium has a special affinity and whenever they are brought together in suitable medium, calcium phosphate is precipitated. In the intestinal tract a good deal of the ingested calcium forms insoluble calcium soaps and is excreted as such in the feces. When a high fat ration is partaken of, a larger amount of calcium is lost in that way, hence the constipated, hard soap stool of prolonged high fat feeding.

There seems to be a very efficient mechanism for regulating the amount of calcium that can be absorbed by the blood stream, for it is impossible to raise the blood calcium above the normal level by oral administration of calcium, even in enormous quantities (1). Only temporarily will a sub-normal blood calcium level be raised by calcium ingestion. That there never is a calcium deficiency in a normal diet is certainly true so that if a hypocalcemia exists, it must be due to some cause operating in the gastro-intestinal tract to prevent absorption, or to excessive urinary excretion, or to some condition of the tissues which causes calcium to be removed from the blood stream. That the latter hypothesis is true seems most unlikely, for we find no calcareous deposits in the tissues in conditions associated with low blood calcium, as in tetany, and on the other hand, calcified nodules found in certain pathological states have not yielded low blood calcium levels. Urinary calcium is always very small in amount (0.002—0.010 gm), being sometimes less than 1 per cent of that lost from the body and the smallest amount in the urine is found in active rickets; indeed, not infrequently there is observed in the healing stage an actual rise in the urinary calcium. Hence excessive excretion of calcium by the kidneys is not responsible for removal of calcium from the blood. Again, infantile rickets is not the result of deficient calcium ingestion, for there is an abundance of calcium in cow's milk, though a good deal of it seems to be in an insoluble state, and our investigation of the calcium content of breast milk in relation to rickets has not shown any constant variation from the normal (2).

The normal blood calcium level is between 9-11 mgs per 100 cc. of serum (or plasma) and as I have said, this level cannot be raised except by direct injection of calcium into the circulation. There are, however, some conditions in which this level is lowered, as, for example, in tetany,

*Read before the Orleans Parish Medical Society, May 26th, 1924.

both idiopathic and experimental, in certain cases of active richets and in nephritic uremia, the calcium level falls to as low as 2.0 mg per 100 cc. of serum. The form in which calcium exists in the blood is two-fold: as soluble salts which dialyze through animal membranes and as calcium-protein combination, which is non-dialyzable. The dialyzable or available calcium comprises about 65 per cent of the total, the calcium-protein about 35 per cent; and this proportion maintains even in presence of a reduced total.

The blood calcium is one of the most fixed constants in the body; it does not vary with the diet, or with the alkaline reserve of the plasma, or with severe acidosis or alkalosis. It is reduced only by a very slow and gradual change and its return to normal is equally prolonged. That the presence of phosphates is essential to the proper utilization of calcium seems assured, for with low phosphorus diets true rickets can be produced in experimental animals, as has been shown by Sherman and Pappenheimer, McCollum and associates, Hess and his co-workers and other investigators of the rickets problem. Moreover, calcium and phosphorus tend to balance one another. Thus in active rickets where the phosphate is low, the calcium is normal and when tetany occurs, associated with rickets, the calcium falls and the phosphate rises. In nephritis when there is retention of phosphate, the calcium in the blood falls and to this is attributed the convulsions of uremia. I recently had the opportunity of analyzing blood from a patient of Dr. Lemann's, a man who had swallowed iodin and oxalic acid. His kidneys were practically not functioning at all, for he had complete anuria. His blood showed 6.6 mg inorganic phosphate per 100cc plasma, the normal being, for an adult, 2.5 mg and the calcium was 7.0 mg—an increase of over 100 per cent in the phosphate, a decrease of 30 per cent in the calcium.

In a recent publication of Orr, Holt et al. (3) a series of metabolism studies were carried out in infants which showed conclusively that the ultimate cause of the defective calcification of bones and the low phosphate concentration in the blood in rickets is the defective absorption of calcium and phosphorus from the intestine. By determining the amount of calcium intake and output in urine and feces they showed in all active cases either a very low retention of calcium or a negative balance (output greater than intake). The retention was greatly increased as the result of cod-liver oil administration or ultra-violet ray therapy.

What factors operated to bring about this increased absorption? That is a question as yet unanswered, but of greatest significance in this regard is the work of Babbot et al. (4) of Yale University and of Marriott and Davidson (5) of Washington University, who studied the gastric acidity of normal and diseased infants. Both schools found a reduced hydrogen-ion concentration in the gastric juice of infants during disease. Babbot found it markedly lowered in infants with tetany (with low blood calcium), Marriott obtained reduced acidity in infants with febrile diseases. This brings us back to our fundamental proposition that calcium remains in solution only in an acid medium and is probably absorbed only from such a medium. In 1907 Von Noorden wrote: "The insoluble calcium salts are dissolved in the stomach to a greater or lesser extent, depending on the amount of hydrochloric acid present. They are only there absorbed, however, in the merest traces, the greatest absorption occuring in the upper parts of the small intestine. There the dissolved calcium solutions are transformed again into neutral or acid calcium carbonates and phosphates and into the salts of fatty acids, the amount taken up by the body depending on the reaction of the intestine and on the quantity of carbonic acid and phosphoric acid, and upon the various fermentation acids present." (6) More recently Steenbock and his associates (7) found that many calcium salts, remaining soluble only in an acid medium, can be absorbed from the gastro-intestinal tract and add "it is undoubtedly the acidity which makes possible the assimilation of the difficultly soluble calcium salts from the intestine." Further important knowledge is obtained from the fact that tetany can be cured by the administration of hydrochloric acid or of substances producing acid, as has been demonstrated by Wilson, Stearns and Janney (8) and by Gamble and Ross (9).

It seems reasonably certain, therefore, that any attempt to combat hypocalcemia should take into consideration the fundamental necessity for a proper acid medium for the solution and absorption of calcium salts. Very recently several writers (10,-11) have attributed hay fever, asthma and other spasmodic affections of the respiratory tract to deficient blood calcium and have treated these conditions by calcium

injection or oral administration. I have made calcium determinations on the blood of four adults with severe bronchial asthma, one an older physician in this community, and obtained these figures: 10.3, 9.6, 9.4, 9.2 mg per 100cc plasma, all within the normal limits. It is possible, however, that such patients may have a gastric hypoacidity though no one has investigated that phase of the problem. It is not untimely to sound here a note of warning; that the determination of the blood calcium requires special apparatus and experience and that if not properly conducted will yield results which will be misleading.

In such conditions as hemophilia, idiopathic purpura, jaundice, etc., associated with prolonged coagulation or bleeding time, there is no reduction of the blood calcium, hence the administration of calcium to such cases is of no benefit. In short, we must bear in mind that where the calcium level of the blood is normal, it is useless to feed calcium with any hope of securing improvement in the condition for which it is given.

To sum up:

Calcium requires an acid medium for its solution and probably also for its absorption.

Tetany, active or latent; some cases of active rickets, and the uremia of nephritis comprise the group of conditions that we know to be associated with reduced blood calcium.

Special care must be exercised in the interpretation of results of blood calcium determinations.

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DISCUSSION.

Dr. L. R. DeBuys (New Orleans): This paper of Dr. von Meysenbug is not only interesting, but instructive. It covers the subject of the metabolism of calcium in the body. Some things that he has mentioned should be emphasized, others we may refer to and add some information that we have gained within the past year or so in connection with this interesting subject.

I wish to refer to one statement in the latter part of the paper with regard to the various conditions now attracting attention from the standpoint of calcium metabolism, namely, hay fever and asthma. It is believed by some that the administration of calcium will be of assistance in these conditions. The hope of relieving these conditions by the administration of calcium is not to be expected in those cases in which the blood calcium is already normal, as no good will come through the administration of more calcium. Just a short while ago I saw four generations in which there were evidences of an increased nervous irritability, as shown by the presence of the Chvostek sign. In the infant there were marked indications of tetany, and in the mother, grandmother, and great grandmother there were marked Chvostek signs. It is interesting to note that the blood calciums of the mother, grandmother and great grandmother were normal. This is not the first instance of the kind that has come under my observation, but it brings out the fact of the possibility of an adjustment in the system after a primary hypocalcemia.

In calcium metabolism there are three things that should be remembered. The feeding of the calcium, the retention of the calcium, and the excretion of the calcium.

The diseases most interesting in infancy from the standpoint of calcium metabolism are Rickets and Tetany. There are two types of Rickets, the one with the relatively high phosphorus and the low calcium and the other with the relatively low phosphorus and high calcium. The phosphorus, however, seems to be more frequently lowered. We have just finished a piece of work which will be presented before the American Pediatric Society which brings out one of the interesting facts in calcium retention, namely, the effect of sunlight upon the deposition of calcium. The ultra violet ray is supposed to have the effect of increasing the deposition of calcium. The effect of the sunlight and the ultra violet ray in promoting the calcium deposit was clearly brought out by Hess of New York and others. I remember several years ago when going through his institution seeing one white baby who from the effects of the sun had a marked sunburn so that it was as black as almost any colored baby I have seen. This case was one in his study upon the effect of sunlight in Rickets.

It should be remembered that a case of Rickets may be inactive and still show some clinical manifestations, as for example, costal bleading, epiphyseal enlargement, flaring ribs, etc. The activity of Rickets, however, is best shown by the chemical examination of the blood.

It is interesting to know that cod fish secured at different seasons of the year have livers which contain variable amounts of oil. To be brief, the oil secured from the livers of the cod fish before the spawning season, contain a greater amount of oil with higher anti-rachitic properties. After the spawning season, not only do the livers contain much less oil, but they proportionately contain less anti-rachitic properties. While speak-

ing of cod liver oil, as one of the agents necessary in the disposition of calcium, we should bear in mind that many of the cod liver oils obtained on the open market are found ineffective, and have a notable deficiency in the anti-rachitic properties.

I remember very distinctly the case Dr Menage refers to. He was the son of one of our confreres, a child of about seven or eight years of age, who was a spasmophiliac. It is customary in these cases to give calcium. This child was given ten grains of calcium lactate three times a day. Coincidentally his hair fell out quite considerably. I referred him to Dr. Menage, who called my attention to a French article referring to a similar condition. I might say that the dose of calcium given was the usual amount for a child of that age. I have never seen this particular occurrence in any other child or individual.

Dr. I. I. Lemann (New Orleans): I have been interested for some years in a possible analogy between the voluntary muscle spasms of tetany and the spasmodic contractions of involuntary muscular fibres of the bronchi; that is to say, the possibility of the analogy between bronchial asthma and tetany. For that reason, some time ago, I asked Dr. von Meysenbug to make some observations upon asthmatic patients. These are the patients he has spoken of tonight. He has not found any change in the calcium content of the blood. Dr. Pottenger of Los Angeles has reported several cases of bronchial asthma relieved by intravenous injection of calcium. His report, however, contains evidence which throws some doubt upon his thesis. His patients came to Los Angeles from a distance. We all know what effect change of climate has on bronchial asthma, and we do not know that the effect was due to calcium and not to change of climate.

I am very much interested in calcium metabolism. For example: there is in the current number of the Annals of Clinical Medicine a report from Mayo Clinic by a former Tulane graduate, Dr. Barrier, in which large doses of calcium were given patients with chronic nephritis, and these large doses of calcium brought about marked reduction of edema. However, he reduced sodium chloride in the diet and replaced it with calcium. How much of the reduction of edema is due to the reduction of sodium ion and how much to calcium administration is to be studied.

In the case of oxalic acid poisoning to which Dr. von Meysenbug referred we secured an autopsy. We did not find in the kidneys the characteristic calcium oxalate deposits which have been reported in earlier cases.

Dr. F. W. Parham (New Orleans): I would like to ask the doctor to say something, before closing, in explanation of the fact that calcium chloride reduces the coagulation time and is a distinct prophylactic against hemorrhage.

Closing: Dr. von Meysenbug:

As Dr. DeBuys said, in answer to Dr. Menage, you cannot feed too much calcium. We cannot raise the blood level above normal; that has been shown a number of times. The excess calcium in the food is never absorbed into the blood.

The cases of asthma, with reference to Dr. Pottenger's paper, treated by intravenous injections, are interesting but, to my mind, cannot incriminate calcium at all. We are quite likely to get a transient relief of spasm by flooding the blood stream with calcium but it does not mean the condition is due to an underlying deficiency of calcium any more than you could say that mitral stenosis is caused by lack of digitalis in a patient's system. It has been shown that calcium injected intravenously is very quickly eliminated. Dr. Denis, injecting calcium into a lactating goat found that there was no increase of calcium in the milk, the injected calcium being quickly eliminated. Three hours after the injection the blood calcium was still about 40 per cent above normal, but at 12 or 15 hours it had returned to normal. I have been asked if the para thyroids had any effect on blood calcium. They probably do control the calcium level, but just how, we do not know. I want also to emphasize before closing that you cannot consider calcium as an isolated substance. Other salts, gastric and enteric acidity as well as the acid-base balance of the entire body enter into reactions with calcium salts. We are accustomed, before operations, to determining the coagulation time and if this is prolonged above the normal of five minutes, we feed the patient calcium lactate. It usually does not shorten the clotting time because there is no calcium deficiency in the blood. On the contrary, in such diseases—as tetany and uremia where we find reduced blood calcium level we do not have prolonged clotting time; furthermore the hemorrhagic diseases, (the purpuras scurvy, hemophilia, etc.) are not associated with hypocalcemia.

EXTERNAL OTITIS: ITS CAUSE AND PREVENTION.*

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JACKSON, MISS.

The caption "External Otitis" is a term used to designate an inflammatory process (acute or chronic) involving the soft structures of the ear, namely the auricle, external auditory canal, and the external surface of the tympanic membrane.

External otitis like most other chapters in medicine has two principal causes that have their respectve sub-headings, namely local and systemic.

Under local causes there are many subheadings that might be mentioned, however I prefer to put them under two headings and call them irritants and infections, and these two causes are in many instances dependant one upon the other, for it is my opinion that infections that gain entrance to the soft structures in and around the ear, without passing through a broken or denuded skin surface, are very very few, therefore I should say that an irritant would be by far the most potent if not the only exciting cause for the cases of external otitis that have a local cause.

Under local irritants I find that constant or frequent moisture stands far in advance of all others and it is this condition that

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we know so well as the "swimming pool" ear, and it does not mean that one must go in a swimming pool to produce the condition, for it is due to moisture that finds its way into the canal from any source, and moisture that does not necessarily take with it infectious microorganisms.

Remembering that the external canal is lined with skin; not a mucous membrane; and that this same skin is reflected over the external surface of the tympanic membrane; and that owing to its location it is not subjected to the external forces that give the balance of the body coverings a higher degree of resistance to irritants; but sun-light and air seldom if ever coming in contact with it makes it more susceptible to an irritant.

It is the dermatologist who tells us that to treat a skin irritant successfully it must be kept dry and free from irritating substances, and it may be that if it were not for these conditions known to us as external otitis occuring in and about the ear they might be in the hands of the dermatologist where they probably belong after the diagnosis is made, and when I say after the diagnosis is made I mean no reflection on the dermatologist, but the fact that it must be differentiated from middle ear conditions that might prove fatal to the patient if not dealt with from that standpoint leads me to this statement. It is not always easy to say whether we have an external otitis to deal with or a mastoiditis. And again it is like all other chapters in medicine; a diagnosis is to be made before intelligent treatment can be instituted.

I have laid considerable stress on the fact that I charge constant or frequent moisture in the external auditory canal as being the most frequent local cause if not the whole exciting local cause of external otitis.

Doubtless all of you have noticed the effect of water on the skin after immersing the hand in water for only a few minutes; a good example of this is the rubber glove on the moist hand which prevents evaporation of the moisture for the period of an operation, and this is moisture that would likely not be infectious, but leaves the skin wrinkled and shriveled after which a certain amount of desquimation must follow before the skin is smooth again. The point I wish to make is that if this condition should be constantly going on as it is in the auditory canal; a canal that is not dried out by air and light that the skin would soon desquimate to the point of an abrasion in which infection would surely follow.

Moisture gains entrance into the canal and if not dried out sets up the desquimatory process, the products of desquimation soon is sufficient to plug or almost plug the canal; this prevents evaporation of moisture and enhances desquimation until the skin is abraded and infection follows. On looking into the canal of an ear that has been subjected to constant moisture for a few days one can see the springing up of the products of the yeast fungi that grows only in the presence of constant moisture; and it was to relieve just this condition that pharmaceutical houses put out and recommended the use of Bulgarian biccillus in the external canal in cases of otitis. To them it was an imperical remedy, but to us it bids fair to become a rational one.

The class of cases that I have just described is that class that we as otologist see and after cleaning the canal apply a swab wet with borated-alcohol and prescribe borated-alcohol to be dropped into the canal once daily and it usually recovers without further attention. Usually when these cases are referred or come to us from some one else we have to explain to them why it is not a good idea to irrigate the canal two or three times daily with warm water or warm boric-acid solution for they likely will have had it prescribed by their physician.

The other class of cases that I would call your attention to is that class that has a local manifestation of some condition foreign to the ear.

Again remembering that I have laid stress on moisture in the ear as being the cause of possibly all cases of external otitis; and that the external auditory canal is covered with a delicate skin; and skin that has a low resistance due to the fact that there are no external forces (such as sunlight and air) to harden it, and remembering that in digestive disorders we have a reaction in the skin locally that we know as urticary and that urticary attacks the most delicate area of the body surface, and that with urticary we have a local weeping or moisture of the skin, brings us face to face with that type of case that does not respond to the local treatment just outlined; but takes to the consideration of the gastro-intestinal tract where urticary most likely originates.

I said early in the paper that the cases of external otitis that came to the otologist might go to the dermatologist where they likely belonged, if it was not for the fact that the lesion was in and around the ear; and I might say that the second class of

cases might go to the gastro-enterologist and receive a more permanent cure than at the hands of the otologist.

DISCUSSION

Dr. J. G. Lilly (Tupelo, Miss.): I would like to ask Dr. Adkins what organism he finds to be the most constant in these cases, and what one causes the offensive odor often present.

In the cases Dr. G. L. Brown and myself have examined, by smear and culture, we found the Staphylococcus in almost pure culture, and in two by smear we found a large diplococcus, but lost it in culture.

Dr. E. F. Howard (Vicksburg, Miss.): The fact that the modern, more-or-less-sanitary, swimming pool contributes proportionately about as many cases of external otitis as the old-fashioned "swimming hole" would be a point in favor of the doctor's argument.

A STUDY OF FIVE HUNDRED WASSERMANN REACTIONS CONDUCTED BY THE PROPOSED KOLMER STANDARD, THE ORIGINAL AND THE BASS-JOHNS METHODS.*

F. M. JOHNS, M.D.,

AND

W. E. JONES, M.D.,

NEW ORLEANS.

Under the auspices of the Research Institute of Cutaneous Medicine of Philadelphia, Dr. John A. Kolmer, with the assistance of Drs. Brown, Matsunani, Flick, Rule, Trist and Yagle, has been engaged for the past few years in a most exhaustive study of all phases of the Wassermann reaction with the view of standardizing each factor entering into this test. (1)

Many of the steps proposed in the production of the various reagents constitute important additions to our knowledge of the factors entering into the standardized production and titration of such important reagents as complement, hemolysin, antigen, etc. The production of an antigen that permits the use of at least ten antigenic units, which amount is less than one-tenth of the anti-complementary dose, and which can be manufactured with almost complete uniformity, is easily the most outstanding result of the work and one that more than justifies the enormous amount of labor these studies represent. It is our opinion that the universal adoption of this highly sensitive, extremely safe and uniform antigen would do more to eliminate false positive reactions and standardize the Wassermann results from different laboratories than any of the various changes proposed. This is rapidly being recognized, as shown by the specification of "Kolmer Standard Antigen" on the laboratory reports of many representative institutions.

The summation of Kolmer's work resulted in the proposed Kolmer Standard Wassermann, the essential features of which include elaborate titrations of all reagents each day, minimum inactivation of the patient's serum, use of the Kolmer antigen, and 18 hour ice box fixation of complement.

Here in New Orleans we have been accustomed to use one of the so-called "Original" Wassermann reactions (anti-sheep system, 2 units of complement, sensitized cells, thermostat fixation of complement, Noguchi and cholesterinized antigen), together with one of the fresh serum modifications, such as the Gurd, (2) usually simply designated as a "Tschernogubow," or the Bass-Johns modification of the Gurd reaction. (3) The former test we have usually relied upon as a rather gross but reliable test that was preferable for diagnostic purposes where caution is more imperative than extreme sensitiveness to weakly positive specimens. The latter tests have been continued since 1910, despite the possibility of an occasional false positive or "proteotropic" reaction, because of a very evident high degree of sensitiveness which was utilized principally in following treated or known syphilitic cases.

The published accounts of the great superiority of the Kolmer test quickly lead us to a study of his method, using reagents prepared in Kolmer's laboratory. Comparison with our usual technic in a series of several hundred tests, together with a close clinical investigation of cases in which differences were disclosed, convinced us that the Kolmer test was more sensitive than the "Original" test we had employed. The apparent superiority of Kolmer's antigen over our former Noguchi and cholesterin-fortified antigens lead us to make a comparison of the various methods using the Kolmer antigen. The results obtained form the basis of this report.

All reactions were carefully checked and where differences resulted between the three methods, the entire series was repeated. Spinal fluids for the Bass-Johns reaction were furnished hemolysin (com-

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plement-amboceptor) from pooled negative human sera carefully titrated.

In the series, six additional sera had to be substituted, five for the Bass-Johns on acount of lack of hemolysin, and one spinal fluid for the Kolmer.

The results of the series are tabulated as follows:

Total number of cases.....	500	
Positive by all three methods....	63	(12.6%)
Positive Kolmer and Bass-Johns (doubtful or negative Original)	75	(15%)
Positive Kolmer (doubtful or negative Bass-Johns Original negative)	87	(17.4%)
Positive Bass-Johns (doubtful or negative Kolmer Original negative)	82	(16.4%)

An analysis of this table shows that 63, or 12.6%, were positive with all three methods. The Kolmer Standard and Bass-Johns agreed to the extent of 12 more making 75, or 15%, of positives.

Of the 12 specimens found positive by the Kolmer method only, six were from patients who had definite evidences of syphilis as shown by symptoms, history or spinal fluid findings. In one case there was no evidence of syphilis; and in five no history was obtained.

Of the seven positive only with the Bass-Johns test, five had definite symptoms or history of syphilis, and the history of the other two was not obtained.

From the experience gained in carefully performing almost one thousand Kolmer tests, we believe that the proposed Standard test gives a larger number of correct positives than our former methods, and that while exercising the extreme care insisted upon by Dr. Kolmer in the preliminary titrations that the test is very accurate. The new test is closely approached in sensitiveness and specificity by the fresh serum modifications when performed with the same care and reagents.

We have experienced some little difficulty in always obtaining the exact complement titre necessary at the end of the long ice box incubation period. The complement reduction in the presence of antigen over this period of time results in the possibility of a false positive reaction when the titre falls sufficiently to encroach on the anticomplementary zone, as shown by delayed hemolysis in the antigen controls. The tendency toward the production of false positive reactions is particularly noticed when testing spinal fluids.

DISCUSSION

Dr. W. E. Jones: The subject of Wassermann variation is one of the hardest problems to solve that has confronted the laboratories since the advent of the Wassermann reaction. We often ask ourselves why one laboratory will report a positive and two others a clear negative on the same blood. There are variations in all examinations involving the human factor. In addition to the large number of methods employed in running a Wassermann, we have a large number of biologic reagents to be prepared and standardized. There are just as many different technics as there are technical laboratories. The personal equation comes in for a large number of variations and, last but not least, the constitution of the patient's own blood is subject to considerable variation. We have found with the quantitative Wassermann that very often a strong positive blood would give a definite positive with one-thousandth of a c.c. of serum and in another patient with about the same clinical symptoms it would require as much as one-tenth of a c.c. to get a good positive.

We believe that any laboratory employing only one technic is apt to make a good many mistakes, especially if they employ the modified original. The Kolmer method is more apt to pick up a positive in latent cases and in old, treated cases. Nearly all laboratories will agree on definitely positive blood. It is the weaker ones which are subject to variation and sometimes to variation even in the same laboratory.

Dr. W. H. Harris: I unfortunately came late and missed the main paper but heard Dr. Jones' discussion and by the notations on the blackboard one can appreciate about the contents of the paper. The question of pseudo-negatives and pseudo-positives are indeed serious factors. The modification of the Kolmer is aimed at attaining specific results avoiding if possible, a false positive and procuring a higher percentage of positives. Judging by what I see on the board Dr. Johns and Dr. Jones have obtained somewhat better results with the Kolmer method than with the several other methods paralleled. I think that, of course, the most important feature of the Wassermann reaction is the character of antigen and the careful titration of this component. Individual antigens prepared in an apparently identical manner will vary greatly in their antigenic curve. Kolmer claims that the antigen prepared by his modified method yields an antigen with a very broad curve. This is the type of antigen that is most desirable; one that with a known negative blood will give a clear negative although 20 or 30 binding units have been employed. It occurs to me that even if we do not adopt the Kolmer method as a whole a thorough trial of his modified antigen should be given so as to standardize to the greatest extent the results of the serologists of our society. I would be pleased to meet with these serologists in New Orleans to see if we cannot adopt some system of choice with a view of standardizing if possible, our results. It occurs occasionally that laboratories give contrary reports which to say the least is disconcerting. If we have latent syphilis and get a negative result wherein a specific weakly positive is possible we are doing much harm as such a patient may develop tabes or other forms of nervous syphilis. On the other hand, if we get a pseudo-positive and the patient has no syphilis, we are doing tremendous social personal and financial injury.

It must be appreciated that the Wassermann reaction is as a whole a trustworthy and valuable test when properly carried out and that such a paper as presented is aimed at correcting as far as is possible the percentage of error that is inherent in all human procedures.

Dr. J. A. Lanford: The standardization of the Wassermann is most important, and I feel that the work of Dr. Kolmer along this line is very commendable and, as a whole is meeting with considerable success. However, I am inclined to the conservative side of the Wassermann reaction from the standpoint of diagnosis, and feel that I would rather occasionally miss a Wassermann that should be positive than to report an erroneous positive reaction.

We must not lose sight of the fact that clinicians should rely on something else than the laboratories for their diagnosis and if these clinicians feel that there is any doubt in their minds that the patient has syphilis, in spite of a negative Wassermann, they should seriously consider their clinical findings and subject the patient to a therapeutic test. I have seen too many cases, among the medical students, whose days and nights were made miserable because their blood gave a weakly positive Wassermann reaction, done by someone who used a modification and a very sensitive antigen. It has ruined their lives for months and years, even though they had no history of a lesion and no symptoms of the disease. I feel that a weakly positive Wassermann in these cases should never have been reported and certainly not told to the patient. If the clinicians would rely on their own observations and their own therapeutic findings in handling these cases they would find out which is right: weakly positive or negative.

Dr. E. Denegre Martin: I listened to what Dr. Lanford said with a great deal of interest. I have learned that "weakly positive" means nothing, it must be positive. About six months ago a man came into our office who for two years had been gradually running down; he was a wreck. Though he had his appendix removed his condition did not improve and finally I said to him "something is mentally wrong with you." He broke down and began to cry. He told me that two years before, while working in Mobile, he had had an abrasion on his penis. He went to a physician who obtained a specimen of blood which he sent to a distant laboratory to be examined. Although the abrasion disappeared in two or three days he returned to the physician who told him the examination showed he had syphilis, explained to him the tragedies of the disease, and charged him $150.00 for the treatment, which he had a hard time obtaining as he did not want his family to know of his condition. The impression made on this young man was such that he shunned company. He had a sweetheart and broke off the engagement. There was absolutely no suspicion of a lesion. If that physician had had more faith in his own diagnosis and had been more honest with his patient this error would never have occurred.

This is just one case; I hear the same of a number of others. As I understand it, weakly positive is no certainty at all. This is a very important fact to bear in mind and those of us who have only suspicious cases should be pretty careful about the impression conveyed to patient. The man I spoke of has been practically ruined for life. I do not think I will ever be able to correct the first impression made. If we suspect syphilis, we should also explain the possibility of a cure. Why ruin lives because of doubtful reports?

I was delighted to hear Dr. Lanford's discussion. I remember a friend telling me of a technician he had employed, who after some little time wrote to the pathologist who had taught her and asked him for Heaven's sake to correct her technic, for even the preachers she examined had syphilis!

I do not understand how reports can be reliable from laboratories at a distance; they are often improperly packed, spoiled by time, etc. We cannot be too careful in such matters. Laboratory reports should be confirming only in diagnostic value.

Dr. C. C. Bass: I think the paper of Drs. Johns and Jones and the discussion that has followed it should serve to emphasize to us the importance of proper interpretation of laboratory findings, especially with reference to the Wassermann. The figures presented by Drs. Johns and Jones show a variation from one extreme to the other of about 33 1-3 per cent more positives gotten by the Kolmer method alone than with all three methods combined. The question arises as to which to place the most confidence in. I do not think it is particularly important whether we place more confidence in one or the other, provided we are alive to the weaknesses of all of them.

To diagnose syphilis on the test alone is unjustifiable. I do not believe it is the proper procedure and do not believe the doctor is showing the proper consideration for the confidence placed in him if he exercises so little knowledge and judgment that he has to base his diagnosis of syphilis entirely on the Wassermann reaction, or on some other man's test, whether he knows him to be able or not. I believe we should make special effort to place proper interpretation as to the diagnostic significance of this and all other laboratory tests, combining the information furnished with all other information in each case. If I were practising medicine, I should certainly want the information furnished by the Wassermann test, but should not diagnose syphilis on it without other information, even if I did the test myself.

Dr. I. I. Lemann: I would like to reinforce what Dr. Jamison said. I remember some years ago a good clinician reported a long series of cases in which Wassermanns had been made, from patients seen in the office and in practice, and he gave quite a considerable precent. of positive Wassermanns that contrasted with the routine Wassermanns in my own experience, where I see only occasionally a positive Wasserman (in 1 per cent of cases). I have adopted the routine attitude Dr. Jamison has suggested and especially with regard to positive Wassermanns. Instead of accepting the positive and rejecting the negative, I accept the negative and reject the positive unless there is corroborative evidence in the history or physical examination. If I get a positive Wassermann I have the Wassermann gone over.

I remember some very worried nights I passed myself because of the shock of the report of a positive Wassermann, done routinely, in the case of a patient in whom I was personally interested. The reaction was done as a matter of routine before the operation. A second reaction from the same laboratory was negative and third reaction from the same laboratory was negative. A specimen of the blood was divided and sent to two other laboratories; both reported negative. I

found myself having spent sleepless nights and gone thru this for nothing.

I think if Dr. Johns' paper has done nothing more than bring up this discussion and attitude proposed by Dr. Bass and Dr. Jamison, it has accomplished a great deal.

Dr. Elizabeth Bass: I would like to stress the fact that, although Dr. Johns read his paper in less than ten minutes, it has taken him many months to carry out this tedious and painstaking work and I, for one feel that we owe him a debt of gratitude for what he has done.

Knowing that he was carrying on this work it was with "fear and trembling" that I felt lest he should in the end condemn our method of making the Wassermann test but it is with a "sigh of relief" that I have listened to his conclusions this evening. In his final tabulation he reports 12 positive tests by the Kolmer method, alone, 6 of which have definite hystories and 6 negative while there were 7 by our method and 5 gave definitely positive hystories while 2 did not. Apparently nothing is particularly gained in the Kolmer technique.

I would like to ask Dr. Jones if he noticed any difference in bloods collected after full meal especially those containing high percentage of proteid?

INJURIES AND INFECTIONS OF THE HAND.*

E. Denegre Martin, M.D.,

New Orleans, La.

With the advent of industrial plants, springing up all over the Southland, minor injuries are becoming more frequent and with them the necessity for a better knowledge of their treatment. The price of labor, which was at one time cheap, is now in many instances almost prohibitive and the loss of time plays an important part in all industries. The physician, therefore, who can keep any plant near its normal working basis becomes in himself an asset to the company and can demand remuneration in proportion to results.

The human hand, the most wonderful piece of anatomical construction, is from necessity most liable to injury; injuries ranging from a splinter driven under the nail to one of sufficient gravity to destroy the hand. The subject of this paper was suggested to me by members of the postgraduate class who do much of this work throughout the country. Noting their keen interest in all cases of this character, I determined to bring the matter before you for discussion. To fully appreciate the difficulties to be overcome, we must have at least a fair knowledge of the anatomy of the hand. In the space of time allotted me, I must confine myself to the briefest descriptions of the injuries, either infectious or traumatic.

Infections: No matter from what source, should always be treated with the greatest respect. The infection through a hair follicle may be a source of serious trouble, and when traumatized spreads rapidly. Nature's first efforts in such conditions is to place a barrier around the seat of infection and though these often point, discharge and disappear, exceptions are too frequent not to sound the alarm in every case. When superficial, though painful, they rarely give trouble if not traumatized, that is, punctured or squeezed, such a procedure is often sufficient to spread the infection. A long and varied experience has taught us that a very simple procedure gives the best results. The hand is kept bathed in a 4 per cent solution of boracic acid; as soon as pointing occurs, the pustule is punctured and the pus aspirated with a vacuum pump. Where this is not available, a large test tube is secured, a drachm of alcohol poured into it and heated to the boiling point. It is then put over the pustule, care being taken to prevent the alcohol from flowing against the hand, a cloth dipped in cold water is then placed around the tube, the rapid cooling creates a vacuum and the pus is aspirated with little pain and discomfort to the patient and no trauma to the tissues. Very frequently one application is sufficient to stop the infectious process. Where the infection has spread to the deeper tissues and the tendons involved, the fingers, or better still, the entire hand is splinted, to prevent the aspiration of the pus along the tendon sheath. Nothing is more important. Never open a suspicious spot along the surface of the hand or arm until it points or fluctuates, otherwise there is great danger of spreading the infection. In all cases every part of the hand involved should be kept saturated with a boric solution. Its effect is almost magical and in our experience far ahead of anything so far suggested. Only recently I heard this subject discussed by one who extolled the use of Dakin's solution. This physician was in charge of a large industrial hospital, where the solution could be made fresh and applied by experts—and this is absolutely necessary as it is most irritating to the tissues which must be protected with vaseline strips and where it has its advantages in certain deep and extensive wounds—I say unhesitatingly, in the treatment of any infection of the hand Dakin's solution has no advantage over boracic acid solution

*Read before the Louisiana State Medical Society, Opelousas, La., April 22-24, 1924.

which is harmless and can be prepared and applied by any one. The medical profession is like the rest of human nature, too often carried off its feet by the glittering accounts of some new discovery. We are too prone to rush into print with the glowing accounts of success, but often slow to correct our errors. *Finally*, the best treatment for infected wounds of the hand is application of boracic acid constantly applied and kept warm by covering the wet gauze or cotton with some impervious material to hold the heat, making the solution more efficacious. Puncture the pustules when they reach the surface and aspirate with a vacuum pump or test tube. In case of a phlegmon of the terminal phalanx (bone felon) or an inflamed area, it is best not to use local injections as this frequently spreads the infection and is exceedingly painful. Instead use *Ethyl Chloride* by inhalation. The cone is placed over the face, the patient directed to hold up one hand and the ethyl chloride sprayed on the cone. When the hand drops the patient has lost consciousness and the phlegmon can be opened.

Bone felon: is the one exception to the general rule and this should never be forgotten. The anatomical construction is such that superficial infections, even the prick of a pin, will lead to serious complications in a short time. The fibres in the pulp at the tips of the fingers are closely connected with the periosteum and the lymphatics lead directly to it. Infection, therefore, is carried directly to the bone; the pus accumulates between the phalanx and periosteum and is detected by the throbbing sensation, heat and pain in the finger. Like osteomyelitis in other bones a rapid and destructive process goes on and unless relieved by evacuation of the pus, necrosis follows, the terminal phalanx is destroyed, and the result, even when confined to the first joint, is a lasting deformity. Never wait on developments or temporize with these infections. Give your patient an anesthetic, it is in such cases as previously stated, we use ethyl chloride by inhalation, drive a sharp scalpel through the pulp until the bone is reached and make an incision in the periosteum long enough to allow the pus to escape, frequently not more than one or two drops. This is oftimes sufficient to abort the infection before any damage is done by its spread, which under tension is always more destructive.

Simple wounds: Wounds, whether clean cut or jagged, so-called contused wounds, are treated alike in so far as cleansing is concerned. When a wound is made by some sharp cutting edge it is usually easier to clean and when properly disinfected heals primarily. When possible protect the wound with a piece of sterile gauge until the hand has been thoroughly washed and disinfected with a solution of 1-1000 benzine iodine, the wound is then cleansed in the same way and the edges coapted with sutures, clips or adhesive strips as the extent of the injury would indicate. In contused wounds it is sometimes best to pare the ragged edges before attempting to close. Where the trauma is such as to involve injury to the vessels and tendons, when possible, the disinfection should be most thorough under an anesthetic and all cut or torn tissues repaired at once. When done under proper conditions the wound heals primarily. It is most important that such injuries be treated with the utmost care as infection means a long and painful convalescence and too frequently loss of a finger, hand and even life. Never lose sight of the fact that you are treating the most important factor in the human body. The loss of a finger means to some, inability to earn a livelihood. What may appear at first but a slight injury may later develop into a serious complication. All punctured wounds of the hands, whether made with some dull instrument or a blank cartridge should be given antitetanic serum if the hands have been exposed to contamination of any kind. The danger is not in the instrument, but lurks in the skin and when the tetanus bacillus is carried into such wounds it is difficult to dislodge; a prophylactic dose of serum is a wise precaution. I personally have my doubts about its sole efficacy in the treatment of tetanus, either intravenous or intraspinally, many cases of cures are reported by its use, but just as many are reported cured without it. Many persons get well in spite of the treatment. We have fourteen cases reported cured with the use of chlorotone in which only the initial dose of serum was given. The patient should be kept under the influence of the drug until all signs of trismus disappear.

Crushing injuries, or any serious injury to the hand, though coming in a measure under the general rules of treatment, are frequently such as to require special attention and just the slight difference which would bring success in one case would bring failure in another. We should always bear in mind the great inportance of preserving as much of the hand or finger as

possible, no matter how small a part of a finger can be preserved, it is often of the greatest value to the possessor. After healing, if for any reason it is found to be an obstacle, as does frequently happen, it is then time enough to remove it and a better plastic operation can usually be done. To go into detail in each instance would require much time and I fear would tire the listener who usually prefers to read about elephants and scorns the mouse, which is far more interesting and much more destructive, but maneuvers in a quiet way and brings disaster frequently beyond repair. If one doubts this reference, go to any assembly of people and ask those who have suffered from injuries of the hand to hold them up, and you will find the "Yeas" will carry. When a finger is so severely crushed that it must be removed, make an effort always to cover the stump with skin, bearing in mind that a crushing injury destroys the circulation beyond the line of trauma and therefore allowances must be made for sloughing. It is often gratifying to see a finger almost severed or so badly crushed that amputation would seem the only alternative, after weeks of coaxing and careful management become again a useful member. Exposed or severed tendons must be given immediate care, suture at once if the continuity is destroyed, otherwise it is not necessary, and cover with skin; in this way they can be preserved. I have seen the entire palmar surface lifted from the hand, the tendons exposed, and yet when such an injury was thoroughly disinfected under an anesthetic and the flap held in place with interrupted suture and sufficient drainage to allow the escape of serum, result in primary union and a perfect hand. *Never forget that upon the initial cleansing and care of the wound depends the result.* Always splint the hand or finger after such injuries as the tendons must be kept at rest.

Fractures: Compound fractures come under the previous heading. In simple fractures the injury is usually easy to recognize as manipulation of the parts will cause pain and often crepitus. Oblique fractures of the phalanges as well as split fractures of the terminal phalanx are recognized by more or less persistent pain The treatment in all such cases means the proper immobilization of the injured parts for at least two weeks. Nothing can take the place of plaster splints in carpal and metacarpal fractures, for these can be moulded to the palm which is concave, and give the comfort and support that no padded splint can equal. Where the phalanges are involved a light splint of tin, wood, or even cardboard will serve the purpose. The X-ray is, of necessity, a valuable aid in the diagnosis of fractures and dislocations of the bones of the hand, but with little experience, these injuries are easily detected and we should learn to diagnose them rather by studying the cases than by depending upon the report of the radiologist, for this shows only the injury to bones, but not to the ligaments, where the greatest damage often occurs.

In conclusion, "Watch the mouse, you can hear the elephant."

DISCUSSION.

Dr. John L. Wilson (Alexandria): Doctor Martin has so thoroughly and efficiently discussed this subject that I feel there is not much I can add. I want to emphasize some of the points the Doctor has made. This whole subject resolves itself into that of preventive treatment, and treatment after the injury has occurred with its resulting infection, and that is the time when the physician usually sees the case. However, when we see these cases early the matter of preventive treatment deserves our first attention.

The Doctor mentioned the local application of iodine, or phenol counteracted with iodine and alcohol. Lately I have been using mercurochrome and I like it very much. It is painless, the patient does not object, and I find it very efficient.

Another thing the Doctor mentioned was anaesthetizing the patient. I think too often we temporize in treating injuries of all kinds and rather neglect to give an anaesthetic many times when we should. It does not hurt the patient and it helps the doctor to carry out his treatment more thoroughly and efficiently. That is the point we should all think of. When the patient is anaesthetized institute thorough drainage, and then treatment with the antiseptic lotions the Doctor mentioned.

Another important thing is the splint. This takes us back to the old classical work of Hilton on "Rest in Pain." It is worth while to read that book. Another book we might read is one by Kanaval. I had the pleasure of seeing him do some work in injuries of the hand. The cases he showed were old cases with deformities, cases that had been neglected. I think his book on this subject is well worth reading.

Dr. W. P. Bradburn (New Orleans): There is one point I would like to mention in connection with this subject, and that is more conservatism in the handling of infections of the fingers. Formerly with an infected area around a hair follicle coming three or four days or a week after injury we were prone to make injection into the base of the finger and make an incision over the infection; we found there a hard, necrotic spot and applied the usual wet dressings, etc. In the last two years we have changed from the radical treatment of a beginning infection to the conservative type, and especially so in the more severe cases where they come with general induration varying from a small spot about the size of a dime to larger. We are putting these parts in splints, and in the hospital, if the infection is marked, and using a constant boracic acid bath

a hypertonic salt and watching the case. If you handle it conservatively the spot will begin to soften and the slough will come out and you have not interfered with the original barrier to infection. If you do not, you are bound to spread the infection; but you will find by conservative methods you will have less trouble and as a rule I believe the conservative plan in infection of the fingers is far better in the long run and that our end results will be a larger percentage of cures with less crippling.

Another point was brought forcibly to my attention about a week ago. A case of pain at the end of the finger following crushing injury, diagnosed by a physician as pus, and a deep crucial incision at the flexor surface made. Pain in the terminal phalanx after injury with apparently no external bruising is generally a fracture. If this case had been seen sooner we would have saved two things, first an incision crosswise, and second, an incision lengthwise. The man I believe is disabled, not from the injury, but because of a faulty incision. Make the incision lateral where possible and put it where it does not cripple.

Let us have more conservatism, more wet dressings, more splints, more common sense surgery.

Dr. P. A. McIlhenny (New Orleans): I was very much interested in Doctor Martin's paper. Minor infections of the hand may go on to great and disabling deformities. From a simple needle prick we may have a disabling ankylosis at the wrist, or adhesions in the tendon sheath which may eventually throw that hand out of use and permanently disable the patient.

Splinting is of primary importance in the treatment of simple infections of the hand, but splinting in the position which will render the greatest amount of function. It is much easier to prevent deformity than to correct it. That was most forcibly demonstrated to me only recently when a prominent gynecologist of Oklahoma City was referred to me. He had accidentally pricked his index finger in an operation and treated it superficially until finally he had an arthritis at the wrist with multiple teno synovitis about the wrists which caused numerous incisions to be made to relieve the infection. The hand was splinted in the straight position, wet dressings applied for weeks, and finally recovery with multiple scars producing contraction and adhesions to the skin and fibrous ankylosis of all the bones of the wrist and considerable adhesion in the tendon sheath. When I saw him in January he could move the middle and distal phalanges, but had practically no motion of the wrist. We treated him with various treatments for hyperemia, active and passive motion, until the middle of March, when he was forced to go home, with an apparatus for active and passive motion which he could carry on at home. If that case had been treated with the wrist properly flexed and the arm in the correct position, the fingers slightly flexed, and motion begun with massage as soon as the pain would allow, even if he had an ankylosis at the wrist he could have closed his fingers with greater readiness than with the splint applied with the fingers straight.

Dr. D. I. Hirsch (Monroe): I enjoyed Doctor Martin's presentation because I have been one of the victims. For eighteen months I carried one hand or the other in splints. I thoroughly agree with Doctor Martin and I rise to make one point. One infection in the hand can produce others, especially around the follicles, and I want to make this statement as to the prophylaxis. Treatment with moisture and heat up to a certain point give good results, but when moisture is applied further than that you get another infection because the skin is softened and the infection gets under the hair follicles. I used carbolic acid and medicaments of all kinds until I learned that the simplest way was to treat these cases with normal saline and boric acid solution, hot, with a splint, and if you apply that you will notice that in a day or two a crust will form at the tip of these follicles. With a sterile scalpel raise it and enough fluid will escape to relieve pain. Continue to soak it until the slough separates; then use a splint and stop the moisture. But I do think if you apply moisture after you have passed that point it distributes the infection.

Another thing you will notice is that after the infection is nearly well and you put on a small dressing with adhesive plaster, under the adhesive you will get infection. After the hand is well if you will paint it with a solution of picric acid and alcohol it sometimes will prevent reinfection.

Dr. C. A. Gardiner (Sunset): We have always heard that personal experience is the best lesson. Before I experienced something of this minor injury affair I was under the impression that it was a minor matter. After going through an infection caused by pus forming at the root of a hair follicle I decided it was a major affair —for three reasons. One was that I was confined to my house for three weeks; second, it was a big financial loss, and third and greatest was that I had this infection opened three times by a confrere of mine. I thought then it was a major affair. It was about ten or twelve years ago when I developed a little fistula at the root of a hair follicle. I opened it with a needle that was not sterile and paid no attention. Infection set in, with the result I have stated. I have had several of these infections since then, but have been more prompt in treating them, so they have been minor affairs. I open them with a sterile needle, take out the hair, cleanse it with peroxide, paint it with iodine, put on sterile dressing and have no more trouble. So I think these minor affairs develop into major affairs.

In regard to bone felons, if we could get our patients to apply early enough so they could be opened before the infection forms we can abort quite a few; but unfortunately they are considered minor affairs and these people do not apply for treatment until pus has formed and the infection has gone to the point where it is difficult to arrest it. But if we could get them to understand that deep incision within 48 hours after the beginning of the infection would abort these felons, we could save our patients a great deal of suffering.

I think Doctor Martin's subject is of great importance to the ordinary physician. Minor surgery is a very important part of our every day practice. Major surgery is confined to a select few, whereas minor injuries are met with by the rank and file of the profession very frequently.

Dr. H. E. Menage (New Orleans): It looks rather presumptuous for a dermatologist to butt into a surgical discussion, but when the surgeon begins to talk about hair follicles I believe we should have something to say.

I agree with the remarks made by Dr. Bradburn, and I would like to add one point in the way of conservatism. Do not squeeze hair follicles; do not squeeze the original infection when it is cutaneous. That applies particularly when the infection is on the upper lip. Many a simple

infection if left alone will allow the patient to recover when other wise it might kill him.

I would like to add to the list of Boric Acid and Iodine applications, a saturated solution of Salycilic in alcohol. It is keratoplastic and will do a great deal of good.

I want to emphasize the importance of a routine examination of the urine in all pustular follicular infections of the skin for sugar, diacetic acid, acetone bodies as well as blood sugar as such an examination may at times be the most important factor in establishing the proper treatment.

I also want to add my dislike for sticking plaster as a dressing in pus infections of the follicles of the skin.

Dr. J. N. Roussel (New Orleans): From what we have heard this morning I think it is quite clear, to me at least, that everything we do for these conditions is as good as another. Every man has a different way of treating them, but they get about the same results. I do nothing that Doctor Martin and Doctor Menage do, and yet I believe I get about the same results that they do. I think it is a well established fact that it does not matter what kind of infection you have, it will last about nine days, and if the patient will allow you to let it alone it will get well in nine days—that is, three days coming, three days at its height, and three days to leave.

I want to say this, Mr. Chairman, and I want to say it from the bottom of my heart, that I hope some day they will put iodine under the Harrison Act. I hope they will not let anyone sell it to any human being. Every patient that comes to you has smeared himself all over with it; you cannot make a diagnosis because he has camoufaged himself from head to foot with iodine. It cannot possibly do any good—it is a joke.

Dr. Denegre Martin (Closing): If you want to start a dog fight, all you have to do is say "Sic 'em." I think this discussion has been fine. I have very little to add, there has been a good deal of truth told. I myself believe if in many of these cases you splint the hand and let it alone, it will get well; but there are exceptions. There is where experience and judgment count.

In closing I want to call your attention to the danger of tetanus. Many of these cases begin with infections of the fingers, and many of these come from blank cartridges. Several years ago there was an attempt made to throw the blame on the blank cartridge. The blank cartridge is only the means of conveyance. What happens is, that when the child shoots the blank cartridge into the finger which is infected, the infection is carried in. Traumatize tissue and you have necrosis, and it is in a necrotic wound that tetanus bacilli thrive. In regard to the treatment of tetanus, I wish to say we have cured fourteen cases by the use of chloretone, always giving an initial injection of the serum. That should be given wherever there is doubt regarding the infection no matter what the condition is; and in our experience the initial dose is all that is necessary. Give the initial dose and then keep the patients sufficiently under the influence of chloretone and they get well. Give it by mouth, from five to twenty grains, and give it often enough to keep the patient under the influence. When they come out, give it again until the convulsions are absolutely relieved. As a rule they do very well.

I want to report an interesting case that a physician whom you all know brought down to me with an acute attack of appendicitis. I verified the diagnosis and the child was taken in and put on the table, but fortunately, the anesthetist recognized beginning tetanus, by the risus sardonicus. I looked into the matter and found he had shot himself in the finger about fourteen days before. We immediately stopped the operation and put the child under treatment. Ice packs were used and he was kept under chloretone and finally got well. I believe if the condition had not been recognized when it was the operation would probably have resulted in death.

C. V. Unsworth, M. D.
New Orleans
President, Louisiana State Medical Society

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ERNEST LAPLACE

With the passing, on May 15, 1924, of Dr. Ernest Laplace, New Orleans lost one of her distinguished sons. A graduate of Tulane and former interne of Charity Hospital, he further pursued his studies in Europe under Pasteur, Koch, Lister and Billroth. Upon his return to New Orleans he became professor of Bacteriology in Tulane. Later he received a call from the Medico-Chirugical College of Philadelphia to accept the chair of surgery. This position he held until his death. During the world war Dr. Laplace served in the army as lieutenant-colonel in the medical corps rendering most efficient service to troops during the influenza epidemic.

Elected to the French Academy in 1903, later he was created an officer of the Legion of Honor by the French Government; in 1923 he was made Knight Commander of the Order of St. Gregory by the Pope.

He invented the first forceps for intestinal anastomosis and was the author of numerous articles on surgery. His loss will be felt not by Louisiana alone, but by the profession of the Nation.

PHYSIOTHERAPY

In an excellent exposition of modern physiotherapy recently published by Kovacs (1) the author berates the modern medical curriculum for its failure to assign adequate teaching facilities in physical therapeutics in our medical schools. He feels that ignorance of this subject among medical practitioners is due principally to the above mentioned cause. That many conditions can be permanently relieved and others appreciably benefited by physical therapeutic measures is an established fact. If the regular profession is not fitted to give patients the benefit of these measures they should voice no objection when they turn to chiropractors and like cultists who nowadays realize their value.

It is true that certain medical men who have employed physical therapeutics exclusively have often become overenthusiastic in their claims regarding the value of this mode of treatment. It is irrational to institute physical therapeutics to the exclusion of other recognized medical and surgical measures, when such aids are indicated. Rather we should recognize physiotherapy as an adjunct to our other methods of treatment.

Many of our profession who served with the Colors in the recent war observed, in both surgical and medical services, that a well equipped physiotherapy department forms a valuable adjunct to medical and surgical treatment. The employment of physical therapeutic measures among injured and diseased soldiers aided materially in curtailing the period of hospitalization.

In traumatic conditions, in acute and chronic inflammatory processes, in paralysis, in contractures and in scar formations local physical measures are found of practical value. The agents in physiotherapy at our command may be grouped under these heads: (a) thermic, (b) mechanical, and, (c) chemical.

Of the *thermic* agents radiant light and heat, superheated air, whirlpool baths and diathermy are the most commonly employed; of the *mechanical* agents massage, mechanical vibration, manipulation, active and passive exercises, static wave current, faradic current, galvanic current and sinusoidal current are widely used; and of the

(1) Kovacs, R.: Physiotherapy in Orthopedics. J. A. M. A. 83:99 (July 12) 1924.

chemical agents ionization and ultraviolet rays give best results.

With the advent of modern psysiotherapeutic apparatus, which must not be confused with the inadequate outfits supplied twenty-five years ago, it is to be hoped that physical therapy in all its phases will be employed and studied on a much wider scale than it is at the present so that ultimately the results of properly indicated and administered treatments will be recorded and published for the benefit of all.

THE DOCTOR IN POLITICS

We often hear of the selfish motives actuating politicians, expressed by such phases as "method in his madness," "axe to grind," "nigger in the woodpile," etc. This year, especially, with the national conventions of the great parties, our state legislature in session and other meetings of local interest, have these ideas been brought home to us. In marked and creditable contrast, however, to the general rule, stands the medical man in politics—not that he very often does not have personal ambitions, too, but, generally speaking, whether it be mixed with these hopes for preference or not, he aims, by his advocacy of certain measures or plans, to benefit the masses of the people.

The above was shown by the attitude of Louisiana physicians in their stand on the several bills of medical interest before the Legislature. Why should we advocate this measure and denounce the other one? Is it because we are afraid of the injury to our calling? No; it is that we feel that a more or less sacred trust has been committed to our care, viz: protecting the public against frauds, imposters and the vicious.

Then, again, at the A. M. A meeting, certain changes were asked for in national laws, for the public good. There were a few doctors at the national conventions; one of these, Senator R. S. Copeland, M. D., was often mentioned as a possible "dark horse" at New York; he was not nominated, but, if he had been and would have succeeded at the polls in November, the public, rather than the medical profession, would hav been the gainer in laws enacted at his suggestion; we might venture the assertion, however, that a physician as president probably would, by his presence, favorably influence enactment of laws, which would cause the government to give as much consideration to public health in humans as to that in cattle and trees.

Our conclusion is that, for those of us who have the time and the inclination, it is our duty to give some attention to political matters; if each one shifted the responsibility, no one would do it and the public would be the loser, by the running at large of the fakirs, the ignorant and the vicious followers of certain harmful cults.

J. J. Haralson, M. D.,

Forest

President, Mississippi State Medical Association

The public meeting on Tuesday evening was held in the Municipal Auditorium, Dr. George E. Adkins, of Jackson, presiding.

The invocation was pronounced by Reverend R. E. Hough of Jackson.

Reverend R. E. Hough: Our Heavenly Father we thank Thee for the many blessings Thou hast bestowed upon us. Thou has given us our lives and the health which we enjoy. We thank Thee for al' Thou hast done for us in days gone by. We thank Thee for the healing remedies that Thou hast placed about us and that Thou hast put it into the minds of men to discover these remedies and appliances. We thank Thee for restoration to health and for the men and women who are giving themselves to the study of the physical condition of men, women and little children that they may have their health, that they may have bodily vigor to go out and in and do the work Thou wouldst have them do.

We thank Thee for this gathering of men and women devoted to the science of healing. We thank Thee for the measure of wisdom Thou hast given and for the remedies which Thou hast placed at their disposal. We pray Thee that they may leave themselves with Thee to be guided in the use of these things, and that under Thy directing care and under Thy good purposes many lives may be spared in our state and that disease and suffering may be put down and the lives of our little children preserved.

We thank Thee for the great work that has been carried on in our state by these men and women, and we pray Thee that the year that is before us may see even greater good accomplished.

Bless everyone here this evening; grant that these men and women may be instrumental in Thee in doing their part in the great work of restoring health in our state. We ask it all in the name of Jesus Christ. Amen.

Turning Over the Keys of the City.

Mayor W. A. Scott: I notice here that I am supposed to turn over the keys of the city, and that is what I must decline to do, because when we heard you were coming we took the doors off their hinges, we took the windows out of their frames, and now that you are here we are willing to blow the roof off if you wish. (Applause.) It is true that we still have a jail, but knowing the members of the medical profession as I do I know they will not go any place they should not.

I want to say to the visitors, however, that while you are here if you violate any of the city ordinances and the police threaten to do anything with you, just let me know and I will have the police put in jail instead of you—and I will send George Adkins along with them. (Applause.)

Welcome on Behalf of the City of Jackson.

Governor H. L. Whitfield: I am glad to have the opportunity of facing so many doctors. I am glad to have them at my mercy. I have taken a good many bitter things at their hands, and now it is my inning. I do not see why they selected me to deliver the address of welcome for Jackson. I think it is because my friend, Scott, has been doing it so long and his reputation for veracity is getting to be so well known that it needs a little bolstering.

But I want to say that I do love this old town, and if the work a man does and the price he pays to become a citizen of Jackson is an indication of how he values that citizenship, I want to say that no man ever paid a higher price to be a citizen of Jackson or any other town than I paid. I spent the earnings of a lifetime; I mortgaged the future; I spend about ten months of the hardest work any man ever attempted to do over the roughest roads. I have ridden more miles in a Ford than any doctor here. I lived in the best town in the world, but I left it to come down here, so you see how I value Jackson citizenship, and I suppose they want me to tell you what a great town it is.

We all love our home town—we all do. No other town can take the place of our home town, but at the same time I think Jackson is more than a town for its citizens. In a sense it belongs to the people of the state of Mississippi. The capitol is here and many state institutions are here, and this Auditorium is the meeting place for the citizens of Mississippi. Here is where they get acquainted, here is where they exchange ideas and express opinions in regard to many, many problems which present themselves to the people of the state of Mississippi. We have recently had many conventions of various kinds here.

I am glad to welcome the doctors, and I want to say this about doctors. I have had something to do with Mississippi affairs for twenty-five years. I think prob-

ably my life has been as closely interwoven with the life of the state as that of any other man in it. I have watched its progress, I have noticed how we have succeeded in solving our problems, and although I am not a physician I want to say that I believe there has been more progress made by the doctors of Mississippi than by any other profession in the state. (Applause.) I want to pay tribute to the splendid health department that we have. I had occasion to look at your report during the last legislature on preventable diseases, and the progress has been marvellous. I believe the time will soon come when we will educate all our people about these contagious diseases that are preventable, so that these diseases may be driven from the confines of our state.

I regret to know that the executive secretary of the State Board of Health, who is directing in a particular way this great work, is to leave Mississippi. I regret to see him go. (Applause.) As to his successor, I want to say that the State Board of Health will, of course, get the best men they can to carry on this great work. I hope it will never be involved in politics. (Applause.)

We have a great state, a state with great resources. But the greatest resource of a state is its people, and anything that has to do with vital resources is the most important work that can be carried on in a state. We will never develop our state beyond its people. Have the people well and strong, have the people well trained in mind, body and hand, people of character, and we can develop the greatest civilization the world has ever known; but without people you cannot do it. The physical man is the basis of everything. I believe it will only be a few years before the preventable diseases will have to go—our people will be educated, and then it will be time for you doctors to put the back band up so you can set the plow to go deeper. I hope the time will come when every individual born into this world will have the right thing done for him at the right time so he can grow into a fine man or woman. I want to see the time when people are grown right in this country and when the larger part of your work will not be getting rid of communicable diseases, but devoted to the great science of growing people right. It is the greatest task ever given to men or women, to take these little infants that come to this earth, and knowing the laws which control their unfolding see that those conditions are provided which mean the development of these babies into the men and women they ought to be.

You are more than doctors, you are citizens of Mississippi, and God knows you go everywhere, you do not hesitate to talk politics. (Laughter.) I stand before probably the greatest bunch of politicians in Mississippi. Now as you go around take every occasion to inculcate in the people higher ideals in regard to their relations to the state. I want to see the time when people will look on the state of Mississippi with love and reverence and not as something to be exploited as so many are doing at the present time. I want to see the boys and girls taught in the schools that Mississippi will soon be committed to their hands, that we are going through a transition period. It will not be long before a great power cable will cut across our state and varied industries will come to Mississippi. I am no longer concerned as to whether Mississippi will be developed; but the thing that gives me the greatest concern is whether we will be ready for that development when it comes. I wish we could get the boys and girls of this state to visualize the state as it ought to be, I wish we could show them their great opportunity, and after they get this vision they will be willing to work and sacrifice and withstand temptations in order to prepare themselves for the time when this great work will take place and they can be leaders and not have to stand on the sidelines.

We ask your profession to help us make the state of Mississippi the best place in the world to live and raise a family. (Applause.)

Welcome on Behalf of the Central Medical Society.

Dr. John Darrington (Yazoo City): Mr. President, Ladies and Gentlemen: I have some good news for you. My speech is very short. In fact, if I had known I was to follow the Governor in his eloquent speech I do not believe I would have appeared at all. It seems to me we are following the Chinese custom—serve the cream and cake, and then bring on a very poor quality of soup.

We want this meeting to be free and easy—nothing formal about it. We have enough troubles at home and we do not come down here looking for any more trouble from the speakers. For the benefit of the laymen in the audience I would like to say, do not be afraid on account of the number of doctors surrounding you, for there will be no operations. And I can as-

sure you that you will not be put to sleep by the oldest anaesthetic known—vocal anaesthesia.

My task is to present an address of welcome from the Central Medical Society to the visiting doctors of the state, and I might say to the laymen that your opinion of doctors and ours are probably different. You see one side only, and we know both sides. It is a pleasure for me to know that the public's opinion of doctors as a whole is favorable. Of course your attitude towards the doctor depends upon your health. If you are in perfect health, he is an ordinary citizen; if you are sick he is of great importance. The public as a whole is not a good judge of doctors. If you were able to appreciate certain qualities and qualifications necessary you would not be led astray quite as often as you are by these various cults the basis of whose treatment, if you analyze it, would be absurd. But as a whole the public feels kindly toward the doctors and I can assure you that the doctors feel very kindly toward the public. But the doctors' attitude towards doctors is one of gratitude and appreciation. One thing that should be appreciated in a doctor is his interest in his cases. When a man goes to the operating table he is like these little lizards the women wear—every man is the same color on the operating table. In other words, you do the best you can for your patient no matter who he is nor how he stands in the community. And doctors make sacrifices that the public knows nothing about.

What have doctors done? They have practically eliminated from this earth some horrible diseases. I will only mention three: smallpox, bubonic plague and yellow fever. A glance at the pages of history will tell you what that means on this earth. Today we are not in dread of epidemic on that account. While nations have been wiped out by these diseases and the people here tonight can remember when the trains were not allowed to stop in Jackson, mail was fumigated and business was interrupted and people went North to get rid of yellow fever. That will never happen again. Who did it? Doctors. We still have diphtheria, typhoid fever and malaria, but the time is coming when these will be eliminated. The end is not in sight, however. The ductless glands must now come in for considerable study. That opens a big field. We know that one gland overdeveloped makes giants, and another gland underdeveloped makes the jockeys that ride race horses. But the time is coming when just as marvellous things will be discovered as we have accomplished in the last fifty years. We know what we do with radium and the X-ray, and I believe that some method will be found by which you can sterilize the individual, free him of bacteria, and in that case old age will be indefinitely postponed and energy and vitality maintained. I trust that is just around the corner.

You wonder what that has to do with a word of welcome to the doctors. I simply mention these things to get us in the right frame of mind so we can appreciate the kind of men to whom we are extending this welcome. You can now understand how grateful we are and how much pleasure it gives us on this occasion to extend a real hearty welcome to our visitors. (Applause.)

Response to Addresses of Welcome—Dr. Jas. W. Lipscomb, Columbus, Miss.

Mr. Chairman, Ladies and Gentlemen:

We have listened with a great deal of pleasure to the kind words of welcome extended us by the citizens of Jackson and the Central Medical Society. Such words are indeed as sweet music to our ears, for as men who labor among the sick and afflicted and whose ears are the receptacle of all gruesome tales of disease and death, we learn to count and to preserve words of gratitude, words of appreciation, and words of welcome, treasuring them up in our memory as the oases of lives thoroughly conversant with sadness.

We note on this occasion the marked and unmistakable air of progress and development in the fair city of Jackson. You are truly taking on a metropolitan aspect, for with your wonderful hotel and your skyscrapers going up on every hand you bid fair to furnish our great state with a long-felt desideratum, namely: a sure-enough city. Unfortunately for our pride, Mississippi is the only state in the Union that can not boast of a sure-enough bona-fide city, but in a few years I am sure that we can point to Jackson as the one which has rubbed that stigma from our fair name.

The medical profession, which I represent here tonight, has suffered more or less since its birth from the humorist. Even before the renowned Gil Blas vented his spleen upon our then defenseless ranks some wag or old-time dandy, lolling in "my ladies' parlor," had given to the world the old story of the man with three sons. The son with great brilliancy of intellect he had made a lawyer, the son of great goodness

he made a preacher, but poor Jim (being a fool) he made a doctor.

Apropos of that may I tell you a true story, one you have never heard, for it happened to me personally. Immediately after my graduation in medicine I settled in the Mississippi Delta, in a little place where there was a railroad station, one store and postoffice combined, and where the plantation owners and managers were wont to gather on Saturday afternoons to discuss affairs in general. There came into that community a long, lean negro school teacher named Atkinson. Being of an altruistic nature I endeavored to help this boy in his scholastic work. I wish you could have seen him—about six feet tall, a veritable Washington Irvin's Ichabod Crane done in ebony. One afternoon when the porch was full who should walk up but Atkinson, whom I had dubbed "Professor." Wishing to notice him I said as he came up the steps: "Professor, where did you teach before you came to Swan Lake?" He replied: "Doctor, I taught for ten con-se-cu-tive months up here at Belen, Miss." I said, "Professor, you are a leader among your people and should set them a good example. That word is pronounced 'con-sec-u-tive.'" Quick as a flash, in a sharp high-keyed tenor voice he replied: "Thank you, doctor, thank you kindly; I take information from any source. A wise man can learn, even from a fool."

The body of men whom you have so graciously welcomed here tonight is the peer of any like body of men who have ever met within your gates. They are, as you well know, one of the great triumvirate of learned professions—the ministry, the law, and medicine. Professionally speaking, from a genealogical standpoint they go back to sacerdotal times, the first mention of which seems to have been in Arabic literature. St. Luke, the beloved physician, seems to have had first mention, followed by Hypocrates, the author and founder of the code of Medical Ethics, and should you desire to peruse a document of clearness, conciseness, and elegance of diction I urge you to read his great oath, formerly administered to every applicant for graduation and which is as truly a classic as is Lincoln's famous Gettysburg oration. Aesculapius, Galen, Harvey, Jenner, Lister, Pasteur, and Koch are names that stand out like great mountain peaks along the highway of scientific medical progress. The members of this profession have ever been men of education, men of great charity, men of pronounced morality and Christianity; men thoroughly conversant with the meaning of fellowship and brotherly love—in fact, well rounded, able citizens of the country in which they lived.

Tonight you have with you a body of men who in order to persue their chosen vocation have been required to receive a high school diploma, to attend two years in college taking a scientific course preparatory to four years in a regular medical college, and if possible this should be followed by a year or more as interne in some hospital. So you see, my friends, the men whom you welcome here tonight represent the regular medical profession and are equipped for the positions they occupy.

If I were asked tonight what one man was the most outstanding figure from a point of economic service to the great state of Mississippi during the past decade I would unhesitatingly, with no equivocation and no mental reservation, name the name of Dr. W. S. Leathers, executive health officer. For fourteen years this man of brilliant intellect, of splendid education, of remarkable executive and administrative ability, of determination and perseverance, and yet with it all an unassuming diplomacy, has stood at the helm and directed to a successful conclusion the Ship of Health. My friends, I fear the citizens of Mississippi do not appreciate to the fullest the work of this splendid man; and as he goes to his larger field of usefulness we will have to say, with Shakespeare, "we shall never look upon his like again."

But it was to one particular feat that I desired to call your attention. When the tocsin of war was sounded and mobilization camps were being established all over the land, Mississippi, as was natural, wanted her share. You know our past reputation as to health. No longer than a week ago I heard Dr. W. W. Crawford of Hattiesburg say, that when the committee of which he was a member called on that grizzled old warrior,General Wood, relative to the location of a camp at Hattiesburg, the General jumped up and striding backwards and forwards said, "I'll be eternally damned before I will establish a camp among the sloughs and bayous and swamps and everglades of Mississippi." When he was shown what Mississippi was doing in a health way he changed his mind; the camp was established, and the records and statistics of that camp show to the world that our state is as healthy as any—the region of the Catskills, the Adirondacks, and the Rockies not excepted. It was the work of Dr. W. S. Leathers that made it possible

for this spectacular refutation of the persistent charge by outsiders that "Mississippi was a cesspool of pestilence and disease."

The medical profession has been accused of parsimoniousness, but in refutation of this charge we have only to point to the most recent great achievement of the profession. You are all acquainted with Insulin, the new treatment for diabetes. Its discoverer, Dr. Banting, a member of the regular medical profession—as have been all medical benefactors—was offered the price of a million dollars if he would sell the patent right. He gave it to his fellow-man.

But, you ask, why this resumé of the regular medical profession? It is done in contradistinction to another body or bodies of men who write the name "Doctor" on the ground glass of their office doors, and who are addressed by their fellow-men as "doctors," but who from a scientific standpoint do not know the Medullaoblongata from the Aurora Borealis.

While walking down the streets of Roanoke, Va., last month, my attention was attracted by one of those glaring, crass, diagrams of the interior of the human anatomy, reminding me of the never-to-be-forgotten picture of almanac fame which shows to all the "signs of the Zodiac," and which directed one to the offices of Dr. Arthur de Collard, born in London of French ancestry, who was practicing the system of poropathy (opening the pores of the skin by the laying on of hands) and CURING: "Internal cancer, tuberculosis, locomotor ataxia, cerebro spinal meningitis, epilepsy, paralysis, St. Vitus dance, heart trouble, valvular disease and high blood pressure," stating as a final word that "this was the only system able to reach these cases." My friends, if it were not so tragic it would be very ridiculous, but when you think of the trusting, innocent, and uninformed who fall into the hands of these charlatans, whose one and only slogan is "Get the money," and who never to this good day have written in the book of life one single humanitarian achievement, we say it is tragic and far-reaching in its pernicious probabilities—as any regular doctor here can tell you.

But what is the crux of the whole matter? It is simply this: the regular medical association who has guarded your welfare through all these years believe that the time has come to require all who in any way attempt the healing art to be qualified to the extent that they will at least do no harm to suffering humanity, and they advise a careful examination at the hands of competent men who are conversant with the branches necessary to qualify in this particular, and ask your co-operation in seeing that such a law is placed on our statute books.

In conclusion, I wish to thank His Honor Mayor Scott, my contemporary Dr. Darrington, and His Excellency Gov. Whitfield, for their cordial words of welcome; and at this time I desire to give public expression to the fact that for fifteen years it has been my distinguished honor and personal pleasure to be the family physician of our present Chief Executive. I have seen him in all moods and tenses of life; I have seen him in adversity and I have seen him in prosperity; I have seen him in the joys of birth and I have seen him in the sorrows of the death of a beloved son. I have seen him hounded almost to desperation by a corrupt political "ring," and I have seen the citizens of the town in which he then lived rise as one man to defend him with their confidence, with their means—yea, with their very life-blood, should it be necessary; and I have seen him come forth victorious, the same calm, sweet-spirited Christian gentleman.

Fellow citizens, I speak as one having authority—I know, I know, I KNOW that your present Chief Executive is clean in his private life, is honorable in his dealings with his fellow-man, is able in his administrative ability—in fact, my friends, he is a MAN in all that the word implies. I am proud to acknowledge Henry L. Whitfield as my Governor, as the Governor of the Mississippi State Medical Association, and as the Governor of all the people of the grand old state of Mississippi.

TRANSACTIONS OF HOTEL DIEU STAFF, JUNE, 1924,

DR. HOMER DUPUY, Presiding

Personal Observations and Deductions in the Management of Labor

Dr. P. L. Thibaut

Twenty years ago 80 per cent of the obstetrical cases in the city of New Orleans were left to the care of mid-wives. Today 50 per cent are attended by physicians. A fuller understanding of the importance of this subject by the laity, and better care in the hands of the physicians have brought this change. There is still much room for improvement.

The progress of civilization, urging young girls to seek the benefits of education, has tendered to develop the mental at the expense of the physical. The ease and luxury that undermine the physical strength of the wealthier classes have found their echo among those less fortunate financially. As a result the delivery of the foetus, at one time a physiological function, except in cases of deformitory of mother or child, today requires the assistance of the physician.

Existing conditions require that the obstetrician acquaint himself minutely with the subject, giving close attention to the patient from the very onset of pregnancy. Answering the first call promptly is essential, thereby allaying the nervousness of the patient, and allowing the accoucheur the opportunity of correcting a malposition. The practice of prolonged walking during the first stage of Labor should be condemmed, as it can only tend to sap the strength of the patient.

When dilatation is complete the patient is ordered to bed, and anesthesia is started. The anesthetic (chloroform or ether) is administered only during uterine contractions until the foetal head reaches the perineum when surgical anesthesia is resorted to. When Labor does not progress steadily, intervention, governed by the exigencies of the case should be resorted to. Useless delays in the hope that Nature will act may be fraught with danger to the life of the foetus, the mother or both. If forceps are used, the blades should lock easily, as the forcible locking is sure to result in some injury to the foetus. Traction on the forceps should be done rhythmically, imitating normal expulsion. The practice of placing a foot against the edge of the bed or table and pulling with one's full strength should be relegated to the age of barbarism.

The use of high forceps should be condemned.

When forceps cannot be properly applied, or slip after application, podalic version should be resorted to.

In a series of approximately two thousand cases, there were only two cases that, in the author's opinion, should have been delivered by Caesarean Section. In one a live foetus was delivered, in the other a dead foetus. In both cases the mothers were badly torn.

Conclusions:—

(a) Close attention to the patient during pregnancy, parturition, and the postpartum stage.

(b) The use of some anesthetic in all cases of Labor.

(c) Early intervention in cases not following a normal course.

(d) More frequent use of forceps and podalic version and less Caesarean Sections.

DISCUSSION

Dr. Nelson: Ethylene is the anesthesia of choice. It is unfortunate that all cases cannot afford it. Pituitin, in selective cases, certainly obviates the use of forceps. I can recall no bad effects from the use of Pituitin. It should, however, be used judiciously; preferably using small doses at 15 minutes intervals.

Dr. Salatich: I have never found the necessity of changing from Chloroform. Have tried few Gas oxygen anesthesias and find that it does not increase pains any more, not necessary especially now that we have pituitin.

For example, case was primipara, having pains. Examined to see whether the head would engage, cervix must be dilated to about size of dollar. By pressing hard and having finger high and letting it come down an inch, it will strike it, that is the sign that the head will engage. Never give more than two mms. of pituitin at that stage. Takes 15 minutes for pituitin to act. At the end of one hour after the cervix is fully dilated, it is safe to give about 3 or 4 mms. Now that the cervix is fully dilated, can start your anesthetic. The head is now on the perineum and the top of the perineum is the hardest part to overcome. Can apply forceps and as soon as overcomes the top of the perineum traction is done easily. I do not approve of caesarean sections. In past year have had several placenta previae and did not do caesarean.

As soon as the head is delivered, I give pituitin and the patient delivers the placenta herself.

Dr. Levy: Judging from the discussions, it seems that there are very few normal cases. No one has said anything about medical mid-wifery. No one had delivered these. When I see a case and it is diagnosed as a normal case, since I have my own anesthetist, gives 3 breaths of Ethylene and tells patient to bear down, gives very little trouble. Have a case now, the perineum was very rigid, slow in dilating. Never examined her once. Went back in afternoon and let her alone.

Case went along nicely and gave no trouble.

Have seen pituitin act in 3 minutes in Caesarean sections. If you give pituitin, as soon as you start the uterus will contract in your hand before you put your sutures in. Never give pituitin until the cervix is fully dilated. Saw one case that had pituitin and uterus ruptured. There are times when we do have to do Caesarean. I have had one in the past three weeks. Placenta Previae was gushing blood.

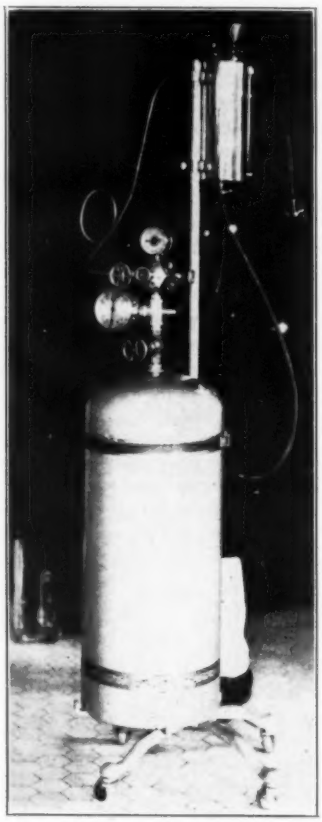
I believe in more frequent examinations. If you give your patient one examination, and do not watch her you do not know whether your patient is normal or not. Have used pituitin over 300 times, never have used it until dilatation was complete or nearly so.

Description of "Louis Levy Infiltration Apparatus" For Use in Local Anesthesia

Dr. Levy: It occurred to me that the syringe method and the ordinary hand pressure method for infiltration of tissues with a local anesthetic could be improved upon. Working on these lines and in looking about for some method to do away with the cumbrous syringe and hand pressure apparatus, and knowing the trueness of air pressure, I have devised the apparatus which I will now describe.

It consists of a stand onto which is attached an air tank capable of 100 pounds pressure. This tank has a gauge showing the amount of pressure. There is a pressure regulator attached to a metal tube that leads from the large tank to the smaller tank containing the solution of local anesthetic to be used. We know that it requires between 20 and 30 pounds pressure to press down and empty a syringe. I figured it would be less traumatic to have the fluid flow into the tissues at an even rate and find that 30 pounds is about the pressure required, hence, the pressure regulator is kept at 30 pounds. This can be increased or lessened at the pleasure of the operator. The smaller receptacle consists of a tank which is clamped to the stand, and a tube which conveys the regulated air from the larger tank to the smaller tank. It also has on the top of it a funnel for filling and an air exhaust. On the front of this tank is a guage which shows the amount of solution the tank contains. At the bottom of this tank is an outlet to which the tube is attached, capable of withstanding the pressure of over 60 pounds. The end of this tube contains an ordinary air cock, the end of which has been turned at right angles giving the proper angle for needle attachment and leverage for insertion of needle.

The tank for solution of local anesthetic can be readily detached from the stand and put in the sterilizer. The tubing can also be detached and put in the sterilizer. Three pieces of tubing are made with each apparatus so that the tank can be sterilized once a day and the tubing readily changed for the different cases. The air in the large tank is ordinary atmospheric air under pressure which can be obtained by the use of any hand pump or at any filling station. To be sure that this air will not contaminate the solution, cultures of the anesthetic have been made after the tank for the local anesthetic solution was boiled.



Levy Infiltration Apparatus for use in local anesthesia

Cultures of the anesthetic were made after ordinary alcohol sterilization on the second day. Both cultures were negative after three days. (By Dr. Couret.)

I would advise boiling the small tank at least twice a week and washing it out with alcohol every day that it is in use. The tubing and needles should be sterilized after each case.

I have used this apparatus and find that with this process, your needle literally

writes your solution evenly and expeditously.

The advantages of this process are:

1. It does away with syringes.
2. Solution flows at an even rate.
3. The amount of solution is accurately measured.
4. The short time it takes to infiltrate.
5. It is on hand at all times.
6. The sterile tubing allows you to go from one case to another with the sterile instrument without boiling the tank the second time.
7. The simplicity of the apparatus.

This apparatus has been in use for the past month by members of the Hotel Dieu Staff.

MEDICAL ECONOMICS

This new department has been inaugurated to facilitate a frank and free discussion of the practical problems associated with medical practice, especially those which deal with more and better service to the public, the honest, efficient transaction of our businesss dealings, our duty to ourselves, and to those who are dependent on us.

We believe that organized medicine can, in a practical way, be of greater help to the profession, and we are taking this means of encouraging the big medical family to join hands in a co-operative movement which will make us better doctors by understanding and employing to a greater degree, the economic laws on which all honest professional and business transactions largely depend.

We believe that the best place to discuss and offer helpful suggestions about this natural and important phase of our development is within the regular medical family and that the best way is the clean frank way; just as the best place for our children to receive the necessary and important knowledge about sex is in our families, rather than in the back alleys where the subject is usually not presented in a clean helpful manner.

The doctor whose finances are in a chaotic condition and who is often living beyond his means, cannot from a medical standpoint give his patients the best there is in him, because of necessity, his energies must be more or less devoted in trying to dodge or juggle his obligations.

How often have we read of a colleague's death and sometime later learned that his wife had taken some humble position to earn a livelihood, or that his children had been deprived of a reasonable education.

If most of us had been endowed with much business acumen, we would probably never have studied medicine, which makes How often do we meet a physician whose very life's blood has been given in the practice of his profession and who, in his later and less productive years, is almost in actual want. Just a little practical knowledge, some real interest in his future, and possibly a slight bit of assistance, some years earlier would have usually prevented these tragedies. There is no reason why honest effort in medical practice should not be rewarded, later by the comforts of life in our less productive years, and by sufficiency of this world's goods, to educate our children and provide for those who are dependent upon us; if only we will devote a small amount of time and thought to this interesting and important part of our life's work.

it all the more necessary that we pool our knowledge and experience. In a short time we can gather data which will be of the greatest practical value. It is not to our credit that we compose a large quota of the suckers on whom fake investment and speculation promoters thrive.

Perhaps you contemplate changing or enlarging your office, or employing an assistant, or joining a group, or perhaps your record system is not satisfactory, or your net income is disproportionately small, or perhaps you would like to know where reliable information can be obtained concerning some stock, bond, or other investment which has been offered you. Write us about these or any other economic problems that interest you and let us try to help you solve them. If desired, your confidence will of course, be respected.

If you have any suggestions or criticism concerning this department, or any ideas that you think will benefit the medical profession, we welcome them. We want you to feel that this is your journal, and especially that this is your page, conducted to help you as you want to be helped.

Our present plan is to alternate your questions and our answers with short articles on such subjects as "Where Does The Doctor's Money Go," "How Much Should A Doctor Save," "How Should A Doctor Invest His Savings," "Suppose You Were To Die Tomorrow," "Medical Expense," "The Fundamentals Of Group Practice," "How Can A Doctor Increase His Income," "What Will You Be At Sixty"; and other subjects which may interest you.

We want you to write and tell us what you think of the idea and how we can help you.

Addresss communications to Dr. Chas. A. Bahn, Orleans Parish Medical Society, 1551 Canal St., New Orleans.

NEWS AND COMMENT

Orleans Parish Medical Society

Two meetings, a Clinical and a Scientific Meeting were scheduled for the past month. The Clinical Meeting at the Charity Hospital was very well attended and the papers were very interesting and generally discussed. The Scientific Meeting was adjourned by the President for lack of a quorum, the reason being that the meeting conflicted with an emergency meeting of the Charity Hospital Staff.

The Legislative Committee appeared before the Senate Committee on Health and Quarantine at the Capitol and strongly urged the passage of the original Charity Hospital Abuse Bill. A favorable report was returned on the substituted bill offered by the Charity Hospital visiting staff. The Chiropractic Bill hearing was attended by our Legislative Committee, and it received an unfavorable report in the House Committee.

Dr. Robert L. Gordon was elected to active membership.

During the summer months the meetings of the Society will be suspended to be resumed the 4th Monday in September.

Members who have not paid their second quarter dues by July 1st have been declared delinquent. Members are requested to pay their third quarter dues which are now due, as soon as possible. They will facilitate the office work, especially while Miss Maier and Miss Marshall are on their vacations.

Report of Librarian for Month of June

During the month the work of listing the Journals of the Tulane storeroom has been completed, netting our own collection many numbers which have filled gaps in our files. The listing of the books is now in progress and we hope to find many titles among these to add to our own library.

About sixty volumes of journals have been prepared for the bindery, and will be sent to our bindery during the week.

97 volumes have been added to the library and cataloged. All of these were received from the duplicate collection of Tulane.

Report of Treasurer for Month of June

Total Receipts	$ 386.00
Total Expenditures	445.00

RESOURCES

Domicile fund, Liberty Bonds, par value	30,000.00
Library Endowment Fund, Bonds, par value	3,500.00
Medical Relief Fund savings account	96.23
	$33,596.23

Bulletin of the Shreveport Medical Society

July Scientific Program by Tri-State Clinic.

August Social Meeting, No Scientific Program

July Subject: The Female Pelvis

Surgery of the Tubes and Ovaries,—Dr. L. H. Pirkle.

Caesarean Section,—Dr. T. E. Williams.

Female Pelvis from a Urological Standpoint,—Dr. E. W. Harris.

Extra-Pelvis Symptoms due to Pelvis Pathology,—Dr. H. L. Green.

Toxemias of Pregnancy,—Dr. W. B. Heidorn.

Ectopic Gestation,—Dr. S. W. Boyce.

The above papers will be limited to ten minutes with discussion limited to five minutes.

Charity Hospital June 3, 1924

Scientific Program

This part of the program was put on by the Ouachita Parish Medical Society.

Dr. J. B. Vaughn talked about Hypertension. Discussion by Drs. Herold, Knighton, Lloyd, Bodenheimer, Boaz, R. C. Young, Sanderson and closed by Dr. Vaughn.

Dr. Geo. Wright talked about Acute Hematogenous Osteomyolitis. Discussion closed by Dr. Wright.

These subjects were interesting and well presented and called forth lively discussion. After a business session the Society was adjourned. Refreshments to follow.

Robt. T. Lucas, Secty.-Treas.

Meeting of St. Tammany Parish Medical Society

The St. Tammany Parish Medical Society held its regular monthly meeting on Friday, June 13th, at Mandeville.

The meeting resulted in a round-table talk with the following results:

Interesting discussion of the Eruptive Fevers, led by Dr. J. F. Buquoi; condemnation of some of the present-day methods of the Louisiana State Board of Health; memoralizing Governor Fuqua to keep politics out of the state medical institutions, with special reference to the state institutions for mental diseases, and strongly recommending and endorsing Dr. Evans, the by Drs. Spencer, Caldwell, Abramson and present very efficient medical superintendent, for retention or reappointment; opposition to the "Chiropractic" bill now before the Legislature, as vicious and a menace to an unsuspecting and gullible public, and petitioning our State Senator and Representative to work and vote against it.

Tangipahoa Parish Medical Society

The Meeting of the Tangipahoa Medical Society was held at the home of Dr. E. M. Robards, Monday night with 23 Doctors present.

The large spacious porch of the Doctor's residence was used for the business meeting, which was addressed by Dr. Geln Smith of Amite, and Dr. A. W. Shaw of the United States Malaria Control Department.

At the conclusion of the business meeting, the visiting medical men were ushered into the large dining room of Dr. Robard's residence, where a dinner was served.

Dr. Beverly Smith of Franklin has been quite ill with facial erysipelas, but he is now convalescing and is considered out of danger.

Faulty lighting and poor eyesight "are today the major factors in one out of every eight accidents," it is asserted by R. E. Simpson, engineer of the Travelers Insurance Compeny, Hartford, Conn., in a report to the Eye Sight Conservation Council of America, which is carrying on a nationwide campaign for better vision in education and industry. Fully 66 per cent of American workers have defects of vision, according to the report.

Washington Parish Medical Society

June 26th, 1924 the Washington Parish Medical Society held its regular monthly session at the Pine Tree Inn, Bogalusa, La.

Luncheon was served at 8:00 P. M., and after luncheon the regular program was taken up.

Program

"Ileo Colitis"—Dr. Chas. J. Bloom, New Orleans.

After the reading of this paper there was an "hour of questioning" round table discussion.

Postabortal Hemolytic Streptococcemia

"The occurence of 4 cases of abortion complicated by hemolytic streptococcemia with recovery under the use of Antistreptococci Serum on the gynecologic service of the Presbyterian Hospital of Philadelphia during the past year, seemed of sufficient interest to warrant reporting them.

Dr. J. S. Couvillon, Councilor of the Eighth Congressional District of the Louisiana State Medical Society, has been elected Mayor of Moreauville.

The Sheppard-Towner Bill has become a law.

It is to be regretted that the differences existing between the Louisiana State Board of Health and the Board of Health of the City of New Orleans could not be adjusted quietly and without being aired in the Legislature or in the Press. Such controversies create in the minds of the public unfavorable impressions which do not benefit the Medical Profession at large.

The value of the effectiveness of a law recently passed requiring male applicants for a Marriage License to produce a certificate from a physician showing that he has been examined during the past 15 days and has been free from communicable diseases will be watched with interest. The law fixes the physician's charge at $2.00 for the examination.

Drs. Herold, Dickson, and Sentell will move their offices Monday, July 28th, 1924 to the New North Louisiana Sanitarium, 1130 Louisiana Avenue, Shreveport, Louisiana.

In June, at the suggestion of the Ouachita Parish Medical Society, there was an interchange of program between that organization and the Shreveport Medical Society. Drs. Vaughn and Geo. Wright went to Shreveport and Drs. Abramson, Sanderson and Gowan made the trip to Monroe. The idea proved to be a very practical one and the essays presented were highly instructive and appreciated.

The new staff of the Shreveport Charity Hospital has arrived and been installed as of July 1st., under the superintendency of Dr. W. P. Morrill. Dr. Lambert, of last year's staff, is now chief surgical resident and Dr. Norphleet of Virginia is the new chief medical resident; Dr. McBride, formerly of Tulane, is assistant to Dr. Lambert and there is a full quota of internes.

Dr. W. M. Jackson was recently injured in an automobile wreck and is now under treatment at Shreveport.

Dr. J. L. Pittman, until recently practising medicine at Cedar Grove, La., was found guilty by Federal Judge Dawkins, at Shreveport, of violating the Harrison act; penalty imposed was 90 day jail sentence and a fine.

The Shreveport Medical Society will hold its annual social session on Aug. 5th.

At the recent commencement exercises of Loyola University the honorary degree of L. L. D. was confered on Dr. J. T. Nix, New Orleans.

Under the sponsorship of the Illinois State Medical Society there is in preparation "A History of Medical Practice in the State of Illinois" that must go to the printer at an early date. In order that this volume may be accurate and complete, all possible assistance is asked from every source, as to personal data and experiences, including diaries, photographs and similar documentary mementoes of pioneer Illinois doctors and of progressive phases of medical practice, as well as of achievements in fields other than those of medical science. Prompt return in good condition is promised for anything loaned the committee, the personnel of which is:

O. B. Will, M. D., Peoria, Ill; C. B. Johnson, M. D., Champaign, Ill; Carl E. Black, M. D., Jacksonville, Ill; George A. Dicus, M. D., Streator, Ill; James H. Hutton, M. D., Chicago, Ill; Chas. J. Whalen, M. D., Chicago, Ill.,—Chairman.

PUBLICATIONS RECEIVED.

The Macmillan Company, New York: *"The Internal Secretions,"* by Dr. Arthur Weil. *"Anesthesia,"* by James Tayloe Gwathmey, M. D. *"Goiter: Nonsurgical*

Types and Treatment," by Israel Bram, M. D.

Lea & Febiger, Philadelphia and New York; *"Diabetic Manuel,"* by Elliott P. Joslin, M. D. *"Hygiene and Public Health,"* by George M. Price, M. D.

C. V. Mosby Company, St. Louis: *"Life Insurance Examination,"* edited by Frank W. Foxworthy, Ph. B., M. D. *"Modern Methods of Treatment,"* by Logan Clendening, M. D.

Funk & Wagnalls Company, New York and London: *"Eat Your Way to Health,"* by Robert Hugh Rose, A. B., M. D.

J. B. Lippincott Company, Philadelphia and London: *"International Clinic, Vol. 11, Thirty-Forth Series, 1924.*

Paul B. Hoeber, Inc., New York: *"Clinical Aspects of the Electrocardiogram,"* by Harold E. B. Pardee, M. D.

Washington Government Printing Office: *Mortality Statistics, 1921, Twenty-Secnod Annual Report.*

REPRINTS.

"The Force Behind the Law," by J. H. Beal. *"Controlled Diaphragmatic Breathing in the Treatment of Pulmonary Tuberculosis,"* by S. Adolphus Knopf, M. D.

BOOK REVIEWS

Habitual Constipation: Its Causes, Consequences, Prevention, and Rational Treatment. By Ismar Boas, M. D., Translated By Thomas L. Stedman, M. D. Funk & Wagnalls Company. New York And London, 1923.

This book is intended to be used as a guide for patients who are under the care of regular physicians for the treatment of constipation. The author emphasizes the value of regulating the bowel function by proper dietary measures, gives very good diet lists, and warns of the dangers of the abuse of purgatives. There are chapters on mineral water cures, country life, electrical treatment, abdominal massage, exercise, hydrotherapy and such other measures as are usually included in a book on this subject. The style is plain and should help intelligent patients understand their condition. The book could be shortened to great advantage. It has no index.

Maurice Lescale, M. D.

Practical Electrotherapeutics and Diarthermy: By G. Betton Massey, M. D., The MacMillan Company, New York, N. Y.

Chapters 1 and 2 dealing with the fundamentals of electricity and the section devoted to Galvanic current are excellent. The chapters on Diarthermy and the High Frequency currents are not up to date methods of applications and should not be accepted as such. Electrotherapy has its place in medicine but it is not a panacea. Works of this type leading one to believe that all conditions are amendable to some form of electricity tend to hold back a valuable adjunct to medicine and surgery.

C. L. PEACOCK.

Intra-Nasal Surgery, By John A. Pratt, M. D., and Fred J. Pratt, M. D., Minneapolis,-Pub. F. A Davis Co., Philadelphia, 1924.

Why another monograph on a subject covered by every text-book on the Ear, Nose and Throat? The original drawings from actual specimens, minute descriptions of the most generally accepted operations, the concentrated attention to the complex Ethmoid region, are ample reason for such a contribution. While the volume abounds with many excellent features one chapter alone must command our interest. It is of supreme importance that a note of warning is sounded, for the first time relative to possible injury of healthy teeth as a sequel to radical, and perhaps badly performed, surgery of the Maxillary Sinus. Are we sufficiently impressed with the anatomical fact, which shows how the superior alveolar nerve, with its accompanying blood supply give vitality to the upper incisor and canine teeth? In the Caldwell-Luc or Denker operations, a large section of this nerve is exposed to operative injury, Dental symptoms, numbness and seeming elongations of the teeth, with even dental devitalization and apical abscess, may be the end-result of radical maxillary sinus surgery.

Moral: The fool-hardy must not step in where even angels should fear to tread.

HOMER DUPUY.

Applied Pathology in Diseases of the Ear, Nose and Throat, By Joseph Beck, M. D., Chicago, Pub. by C. V. Mosley Co., St. Louis. 1923.

This contribution from the pen of the ingenious and fertile-minded Joe Beck represents the personal experiences of that indefatigable worker. It is this very personal touch which gives the splendidly illustrated volume its real intrinsic value. It certainly is not to be classed with the "common garden" variety of text-books. It has an individuality all its own. The author's literary expression is so terse and epigrammatic that

"multum in parvo" is incorporated within the pages of this unpretentious-looking volume. But, read into it, and one will find personal observations, advice, and suggestions, which must prove precious as refined gold to the seeker of knowledge.

How consoling to the perfect technician to have such an authority emphasize that tissue found in the tonsillar fossa after a well-performed tonsillectomy is usually granulation tissue. The lingual tonsil may become compensatorily hypertrophied and may extend its lymphoid tissue developments in the tonsillar fossa region. And yet he differentiates such a sequence from tonsil remains due to imperfect surgery.

Can we not with profit heed the advice that in fulminating frontal sinusitis it is safer to do external surgery? Again there is wisdom in the statement that it is well-nigh disastrous to inflate the middle ear during an acute infection. Worthy of thought is the opinion that marginal perforation of the ear-drum is associated with necrosis, and may call for surgical interference. Of practical import is the assurance that in any type of acute meningitis, with arachnoid irration, the spinal fluid will show cytological changes, even though the fluid appear normal in color and pressure. We could indefinitely quote words of wisdom from a work which fills a long felt need. It unmistakably carries out the definite idea of first understanding the underlying pathology before instituting a reasonably hopeful line of treatment. The microphotographs, while not retouched, are illuminating. As this unique contribution is dedicated to the future of Oto-Laryngology, the vanguard, as well as the rank and file, of the specialty can gather inspiration and promise for better work by a study of Beck's "Applied Pathology."

HOMER DUPUY.

The Pharmacists' Botany: by Geo. B. Rigg, Ph. D., Associate Professor of Botany, University of Washington. Cloth. MacMillan Co., New York. 1924.

The title of the work is suggestive, and we gather from the author's preface that his aim has been to present not only those phases of Botany that are of specific interest to the pharmacist, but also to give a general view of the subject which will serve as a background for him in his professional work. The importance of Botany to the student of Pharmacy is indicated by the fact that approximately three hundred official drugs are derived from plants. The author has classified his subjects well and presented them in a most interesting manner One feature that is especially commendable and consistent with the author's aim is the separation into groups of the official and unofficial drugs. Another is that section of the book devoted to cultivation of drug plants both experimentally and on a commercial basis. The book is replete with clean-cut illustrations, many of which are photographic in type. The reviewer was a bit disappointed to note that little or no reference is made to the subject of Pharmacognosy or the microscopic examination of powdered drugs for the purpose of identification.

GEO. S. BROWN

The Diseases of the Breast, by Willmott H. Evans, M. D., F. R. C. S. London, 1923. University of London Press.

This is a very readable book. It gives a comprehensive discussion of the anatomy and diseases of the breast. The illustrations are not numerous but excellent. The author adopts the parasitic theory as the best explanation of neoplastic growths. He admits the parasite has not been discovered, but insists that the origin, method of growth and behavior in general of cancerous tumors indicate their parasitic origin. The spontaneous care of many such growths is thus easily explained, he believes. With the death of the parasite the irritation ceases and the cancer cells no longer proliferate. The book has our hearty commendation.

F. W. PARHAM.

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